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CHILD-REARING ANTECEDENTS OF ACHIEVEMENT BEHAVIORS IN SECOND GRADE BOYS.

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THE INTERRELATIONSHIPS AMONG PARENTAL CHILD-REARING ATTITUDES AND PRACTICES ON CHILDREN'S ACHIEVEMENT BEHAVIORS WERE EXPLORED. APPROXIMATELY 104 SECOND-GRADE BOYS WERE SELECTED AS SUBJECTS. FOUR MEASURES WERE EMPLOYED TO ASSESS ACHIEVEMENT AND THREE METHODS USED TO MEASURE ACHIEVEMENT-RELATED PERSONALITY VARIABLES. QUESTIONNAIRES WERE SENT TO THE PARENTS TO ASCERTAIN THEIR PRACTICES. AN INTERCORRELATION MATRIX WAS OBTAINED VIA COMPUTER PROCESSING. SUCCESSFUL ACHIEVERS WERE FOUND TO POSSESS WELL-ADJUSTED BEHAVIOR. PARENT ATTITUDES ASSOCIATED WITH ACHIEVEMENT WERE CORRELATED WITH INTELLIGENCE. PARENT EDUCATION PROGRAMS WERE PROPOSED TO MODIFY PARENT ATTITUDES TOWARD ADJUSTMENT AND ACHIEVEMENT IN THEIR CHILDREN. (RS)

CHILD-REARING ANTECEDENTS OF ACHIEVEMENT BEHAVIORS IN SECOND GRADE BOYS

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Cooperative Research Project No. 1838

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CHAPTER I

INTRODUCTION

The primary aim of the educator is to help each child towards successful academic achievement. This emphasis on success in school is reinforced through the other institutions of the society, including the family, mass media and government. Each has promoted the value of high academic achievement, as an end in itself or as a means toward the progress of society. Education has become a national commodity, subsidized by federal funds (including research grants such as this one) and intertwined in a "race" with our cold-war opponents. For these reasons, as well as those which are more "purely" scientific, it would seem important to gain as much information as possible about the conditions which are related to school achievement so that these can be taken into account in planning the school curriculum and in helping each child to reach his highest potential in the area of academic achievement. The purpose of this study is to explore some of these conditions.

A wide variety of variables might be chosen for study in pursuit of the conditions of successful academic achievement. For example, Anderson (1957), Ryan, et al. (1959, Spaulding (1963), and Sears (1957) have studied the teacher's skills and techniques as a modifying condition of achievement. Smuck (1963) recently has explored the child's peer relationships as a modifying condition of success, and Sears (1963) has studied the interaction of the child's self-concept with academic achievement. Each of these and many other recent studies in this field (some to be reviewed in the next chapter) may be thought of as focussing on some aspect of the interaction between the school environment--the curriculum, the teacher, the peer-group--and what the student brings to that environment. This study is primarily concerned with the latter part of this interaction. Specifically it focusses on the child's adjustment to the school situation, defined by a set of achievement-related personality variables. It is our basic assumption that individual differences in academic adjustment, or achievement-related personality functioning, are the product of the interpersonal environment the child has experienced, in the family and elsewhere. Since the child's interactions with his parents form such a major part of his life experiences before entering school, it seems important to investigate further the effects of some of the parents' child-rearing attitudes and practices on children's achievement behaviors. The specific subject-matter of this study is the interrelationships among child-rearing antecedents, academic achievement and achievement-related personality variables in second-grade boys.

Traditionally, differences among children in academic achievement have been thought of as primarily a product of differences in scholastic aptitude or intelligence. The additional assumption has been made that intelligence is largely "innate" or genetically determined. An important consequence of this assumption is the view that differences in "innate" intelligence must be controlled for, or at least measured and statisticallypartialled out, when examining the influence of any other set of conditions on achievement. This was, in fact, the view we adopted when we formulated our original proposal for this project. Further examination of the relevant literature, however, as well of the implications of our own theoretical position, has led us to question this assumption.

To be sure, any assumed influence of parental attitudes or interpersonal relationships on achievement must be mediated through the effect of these conditions on the child's intellectual functions. There is a considerable amount of recent literature that suggests that just such antecedent conditions as those which we hope to measure do in fact exert an effect on cognitive functions. Much of this literature has been summarized by Maccoby and Rau (1963), and their own study of the interpersonal correlates of differential abilities is a case in point. Other relevant examples are the work of Witkin (1962) on field dependence-independence as an aspect of cognitive style; the work of Kagan et al. (1963) on styles of conceptualization; Grimes and Allinsmith's study (1962) of the interaction of compulsivity,anxiety and methods of learning to read; Sarason (1960) and others on anxiety. A recent unpublished study by Hurley (1963) specifically relates parental attitudes to differences in performance on a commonly used test of ability. Our position is one held in common by many child development specialists, such as Gallagher (1962), who believe that intelligence is modifiable by a variety of conditions, ranging from specific training to interpersonal relationships with significant others in the child's life. Probably Hunt (1961) has provided the best general theoretical statement of the point of view to which we subscribe.

Following Hunt then, we must assume that intelligence, as measured by standard tests, is modifiable by at least some of the same variables that influence achievement. Perhaps this is simply another way of saying that there are no pure or direct measures of "innate" intelligence. Thus the performances we measure are always the products of the interaction between (probably) genetically determined central processes or structures and experience. This is not to say that some measures of intelligence may not be preferable to others for certain purposes. It is traditionally assumed that the individually administered intelligence test, such as the Stanford-Binet or the WISC, is less influenced by uncontrolled motivational factors or specific academic skills than are group tests. Thus scores on the individual test are assumed to represent something closer to "innate" ability. (To a certain extent we shared this assumption when we decided, as will be described in Chapter III, to include the WISC as a measure of ability.) The data of such investigators as Bayley (1949) and Sontag (1958), however, amply demonstrate the limited stability of IQ scores, and the relationship of fluctuations in IQ to interpersonal factors.

Even if pure measures of innate intelligence were available, one might well take the position that they would be the best predictors of academic achievement. As we shall see, achievement of first and second graders is a global process encompassing many variables. As in other situations where one is called upon to predict overall success or adequacy of a performance which is multidimensionally determined, probably the best predictor will prove to be another global measure of success in a very similar performance. Thus it would appear to us that "success" at first and second grade, either as judged by teachers or measured by tests, or both, are the most useful current statements of predictive achievement, similar to the predictive power of grade-point average at ninth grade for achievement in high school. Each encompasses a range of antecedent and consequent conditions, none of which functions as well independently as all of them do together, largely because the sources of shared and independent variance are unknown. (In Chapter IV we shall present data which strongly support this view that a global measure of "readiness" or success is the best predictor of future success.)

If, on the other hand, one wishes to approach a more precise account of the specific determinants of academic achievement and their relative influence, one must first establish which variables, considered singly, do in fact have an effect. This means that in a correlational study such as the present one, one's first step is to determine which of the hypothesized determinants of achievement are in fact significantly related to measures of achievement, regardless of their relationships to other (and possibly mediating)variables. At a later stage of investigation one can then proceed through partial and multiple correlational analyses to specify more exactly the relative contribution of each of these determinants. For example, if parents' attitudes modify achievement, thereby modifying the expectations of the child's achievement, then these modified conditions would have to be partialled out to examine the effect of one antecedent variable in relation to one consequent measure. Were the influence of intelligence, per se, examined, parent attitudes, teacher effectiveness, peer perceptions and socio-economic status might have to be controlled. It can be argued, however, that correlational studies such as this one are studies of relationship in spite of other influences. It can meaningfully be asked what are the relationships among achievement and personality measures given the attitudes expressed by the parents of these boys, and what are the relationships among parent attitude and achievement variables given their level of intelligence. It would seem that for studies of young children, pursuit of single influence variables can become hopelessly enmeshed in "chicken and egg" dilemmas. We are stuck with the chicken, and can only hope to describe his feathers and speculate as to the source of their sheen.

There is one respect, however, in which the present study has a distinct advantage over most previous research in this area. Previous studies have demonstrated relationships between child-rearing variables and achievement behaviors in school children. However, in previous research the data on child-rearing variables were gathered concurrently with the collection of data on achievement and achievement-related personality variables. This made it difficult to determine whether the parent variables were actually antecedents, or whether the parents' child-rearing attitudes and practices had been affected by the child's personality, or by his success or failure in the area of academic achievement. This project was planned as a follow-up of two coordinated studies carried out with the same sample of boys, in which data on parent child-rearing attitudes were collected two years previously, at a time when the children were just beginning their formal training in academic skills, and before the parents had knowledge of how successful their children would be in academic work. (Concurrent measures of parent attitudes were also collected in the course of this project, along with the measures of achievement and personality.) This gave us a stance from which a causality might be inferred in studying the relationships between earlier child-rearing attitudes and second-grade achievement. In any case, it is difficult to separate out antecedent and consequent relationships of child-rearing to children's behavior. The design of this study does allow us, however, to explore the possible differential effects of earlier and concurrent parent attitudes on achievement and achievement-related personality variables at the second-grade level. Knowledge of attitudes of parents of kindergarten children that are predictive of adjustment to school and achievement in later grades can be of value in providing the basis for setting up programs of education early in the child's schooling, and thus to enable the parents to help their children towards more successful achievement from the time the child is first beginning to learn academic skills.

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CHAPTER II

BACKGROUND AND HYPOTHESES

Previous research

The immediate background of this study consists primarily of the research of the three investigators, which led to the development of the hypotheses stated below. Each investigator approached the study of achievement from a position that was somewhat different from the others and added one of the three orientations described below. We can state our common ground as a general interest in the influence of parental antecedents, specifically of their child rearing attitudes, on the child's developing personality and the interaction of these personality variables of impulse control, mastery, attentiveness, social adjustment, and self-sufficiency with cognitive development. The methods of investigation used (described in Chapter III) were selected, with some few exceptions from the previous research of one or the other of the investigators.

Two of the investigators' dissertations dealt with the same sample of boys that comprise the population of this study. They therefore provide the direct background of this research. The theoretical positions of their studies, and that of the principal investigators' work on Differential Abilities, supply us with the general framework of constructs that lead us to our hypotheses. In addition there is a growing body of work contributing to the stance that the interpersonal experiences of the child with the significant others in his environment modify his ultimate cognitive growth and functioning.

As Maccoby and Rau (1962) report:

> "Two streams of research . . . are coming out at the same point. Both the work on factors which influence the growth of the total IQ, and the work of the antecedents of cognitive style point to the existence of emotional factors (growing out of the child's experience in interaction with significant other people) which account for some of the variance in intellectual functioning."

It is accounting for and predicting the general conditions which modify differential achievement that interest us specifically.

The orientation brought by the principal investigator to this project derives from two aspects of her previous work. One of these was her collaboration with Winder (Winder and Rau, 1962) in a study of parental attitudes related to social adjustment in boys of later elementary school age. The findings of this study lent some support to the general position that parental attitudes influence boys' adjustment as manifested in the school situation and as defined by such behavioral dimensions as aggression, dependency, withdrawal, and likeability. In the Winder and Rau study, the Peer Nomination Inventory (developed by Wiggins and Winder, 1961) was used to measure the above aspects of social adjustment. The usefulness of this instrument in this and in the Differential Abilities study (described below) led us to consider peer-ratings as an important source of information about a child's social behavior in the classroom, and about his personality and cognitive functioning as reflected in social reputation. We thus developed an adaptation of this method of assessing achievement-related personality functioning (described in Chapter III) suitable for use with primary children. Our measure of parent attitudes also derived from the Winder and Rau study, being a selection of scales from the Stanford Parent Questionnaire developed and used by them.

In collaboration with Eleanor Maccoby (Maccoby and Rau, 1962), the principal investigator also carried out a study of differential abilities in fifth-grade children. A study by Elizabeth Bing (1963) of the child-rearing practices of the mothers of children with discrepant abilities was carried out in conjunction with this project. (Children with discrepant or differential abilities were those scoring significantly higher in one area--Verbal, Space, or Number--of the Thurstone Primary Mental Abilities test than in another.) The findings of these combined studies led to the conclusion that interpersonal influences do indeed affect the development and differentiation of cognitive ability, and that these influences are mediated through such aspects of personality functioning as the development of impulse-control or self-sufficiency. High verbal children, for instance, were found to be more dependent on adults, presumably having been "trained" to be so by mothers who were especially ready to give help and direction rather than allowing the child to work out problems for himself. High verbal children were also more distractible than the other groups. High number children, in contrast, were more self-sufficient, less distractible, and more assertive. High space children were found to be relatively immature and unsuccessful in their social behavior, and inappropriately sex-typed. There was some evidence that these children's mothers were neglectfully permissive in their child-rearing practices, thus allowing freedom for exploration and manipulation of objects but producing less involvement in interpersonal relationships than was characteristic of the other groups. Our hypotheses referring to the differential effects of parental attitudes on numerical and verbal achievement derive directly from the findings of this study, as do our attempts to measure distractibility as an aspect of impulse-control.

Milner (1951), Bayley (1949), Sontag et al. (1958), Kagan et al. (1963), Plank and Plank (1954), and Levy (1943), preceded the above study and led to the general hypothesis of the effect of the influence of parental attitudes and child rearing practices on cognitive development and achievement.

The second contribution to the general orientation of this project derives from the interest of one of the co-investigators, Mlodnosky (1963), in child-rearing antecedents of Readiness for school. Mlodnosky used teacher ratings as a measure of success in kindergarten. She found High Sex-Anxiety and Rejection were significantly inversely related to teachers' ratings of over-all Readiness, Constructive Play and Self-Sufficiency, and to the child's Self-Sufficiency as perceived by the mother. Teachers' ratings of Constructive Play were significantly positively related to child's self-sufficiency as perceived by the mother. The teacher-ratings of Readiness and Constructive Play are also highly intercorrelated, indicating that as far as the kindergarten teacher is concerned, Self-Sufficiency and Readiness are judged on the basis of the child's ability to play constructively in the classroom.

Self-sufficiency at home and constructive play at school, although related, were not both related to mothers' Use of Reasoning. Self-Sufficiency at home (as reported by mother) was positively related to Use of Reasoning, whereas Constructive Play was not.

These results may be taken to support the influence of Restrictiveness and Rejection on readiness for school, as well as the possible effect of Reasoning. They form the basis of several of our hypotheses.

The third contribution was Anastasiow's (1963) position, which can be summarized as follows: that through the agents of socialization (family, peers, school, community members) the child learns the values, roles, statuses, and sex-role behavior expectancies of a given society. These role expectancies are transmitted to the child through the family, with the mother, as Helper (1958, Angrillo (1960), P. S. Sears (1953), and Milver (1951) suggest, playing the dominant role. The stages have been hypothesized to be early identification (six months to two years); middle identification, characterized by recognition of gross sex differences (two to four years); and sex role pattern assumption. Support for the earlier stages can be inferred from the child's having learned gross differences between boys and girls as shown in such studies as Sears, Maccoby and Levin (1957), R. Hartly (1952), Rabban (1950), Goodenough (1957), and Brown (1958). Boys also at the age from two to four have been shown by Van Alstyne (1932), Rabban, Goodenough, Vance and McCall (1954), and M Honzick (1951) to play with blocks, wagon and transportation toys, while girls select dolls, crayons, or toys involving household tasks. Sex-role pattern assumption has been inferred from the child's aggressive doll play (P. S. Sears, 1953), and expressed preference or selection of the male doll or masculine toys by Rabban, Brown (1956), Fauls and Smith (1956), Goodenough (1957).

To the Freudian, this manifest behavior can be interpreted as a sign of a break in the boy's libidinal object-cathexis to the mother and beginning to identify with father, the aggressor. The resolution of this conflict (Oedipal situation) can be described as the achievement of the child in adopting a sex-role pattern that is isomorphic with the cultural expectancies of that role. Identification with the same sex parent may or may not take place in the adoption of a sex-role pattern.

As Jourard (1955), Helper, Angrillo, and Milver have speculated, the pre-school child adopts a Gestalt of the pattern that resembles the parental ideal model rather than a specific model. The values, attitudes and ideals that the child associates with the modeal-idea modify what the child's perceptionof the learning situation are, as well as providing him with modes of behavior for interpreting the environment. The child tends to participate in a learning situation based on the sex-role expectancies he perceives to be part of the role that he is in the process of adopting or has adopted.

Thus, Anastasiow concluded, boys with masculine or feminine sex-role patterns would have higher mean scores on academic achievement and achievement-related measures such as teacher ratings than would boys who had not adopted a consistent sex-role pattern. In addition, Anastasiow predicted that parental attitudes facilitating role adopted would be high reward and high warmth, while high sex-anxiety and rejection would have a negative effect on achievement.

Masculine boys were indeed found to have significantly higher scores on reading achievement tests than boys with inconsistent sex-role patterns and, in addition, were rated higher by teachers on Readiness, Constructive Play, Social Virtues, Maturity and Physical Ability. In first grade, masculine boys were rated significantly higher on Social Virtues, Physical Ability, and Outdoor-Indoor Play than feminine boys, and on Social Virtues than boys with inconsistent sex role patterns.

Mothers' attitudes of Rewarding Independence, Achievement Standards and Reasoning, and fathers' attitudes of Contingent Reward, Rewarding Independence and Closeness to Fathers were all significantly positively related to reading achievement.

In addition, scores of mothers of masculine boys on scales measuring Self-Esteem, Rewarding Independence, Achievement Standards and Reasoning were positively correlated with reading achievement, whereas the attitudes of mothers of feminine boys were significantly related on the scales of Contingent Reward, Achievement Standards, and Reasoning to their sons' reading achievement.

These findings, added to those of the Mlodnosky study with the same sample of boys, further support our assumption that certain dimensions of parent attitudes are predictive of differences in achievement in the early grades in school. And further, they demonstrate that the learning of sex-appropriate patterns of behavior, which may be considered as one aspect of general social maturity, is also related to school achievement and mediates the influence of parental attitudes on achievement.

Previous research on child-rearing antecedents of achievement has included studies by Drews and Teahan (1957), Kurtz (1951), Symonds (1939), Milner and Silverman (1959). This research project differs from these studies in that the first three were done with older children, the Symonds study included children of a wide age range, and the studies by Milner and Silverman used small samples and did not carry out extensive measurement of either antecedent or consequent variables. In addition, studies by Winterbottom (1958), and by Rosen and D'Andrade (1959) related child-rearing antecedents to need-achievement and to achievement in an experimental setting. However, neither of these studies related parental antecedents directly to school achievement.

In summary, these studies relating child-rearing antecedents to school achievement tend to indicate that parental rejection is inversely related to school achievement, and that demands for mastery tend to be related to high achievement. No findings have been reported on the relationship between use of reasoning and school achievement other than those of Anastasiow cited above. Conflicting results have been reported on the relationship of restrictiveness to school achievement, with some of the studies reporting direct relationships, and others reporting inverse relationships. Mlodnosky has suggested that this discrepancy may be resolved if we assume that the measures of "restrictiveness" used in some studies actually include items representing demands for mastery.

Hypotheses

This research led us to believe that four child-rearing variables are of particular relevance to the study of school achievement. These are: (1) low warmth, or rejection of the child by the parent; (2) restrictiveness, or suppression of impulse--making negative demands on the child and consequently limiting his exploration of the environment; advising the child of what he should not do, rather than of what he should do; (3) positive demands on the child for self-sufficiency and other mature behaviors; (4) the use of reasoning as a child-rearing technique. (Our subsequent analyses of the parent attitude measures have led us to consider reasoning as one aspect of the third dimension.) Insofar as possible, data on these child-rearing variables were obtained from both father and mother. The relationships between school achievement and the child-rearing variables will be analyzed separately for father and mother. However, initially, the same predictions were made for the relationships of achievement to father antecedents and to mother antecedents. The same predictions were made for concurrent parent attitudes and data on attitudes collected at the kindergarten level, since no research had been done which led us to make different predictions for these data.

Hypotheses to be tested were the following:

Hypothesis 1. The more rejecting the parent, the lower will be the child's achievement in second grade, as measured by tests and by teachers' and peers' ratings. This prediction will hold for over-all achievement, and for verbal and numerical achievement.

Hypothesis 2. The more restrictive the parent, the lower will be the child's over-all achievement in second grade.

Hypothesis 3. Parental restrictiveness will have a greater negative effect on numerical than on verbal achievement.

Hypothesis 4. The more positive demands the parent makes on the child for self-sufficiency, the higher will be the child's academic achievement in second grade.

Hypothesis 5. Parental demands for self-sufficiency will have a greater positive effect on numerical than on verbal achievement.

Hypothesis 6. The more the parent uses reasoning as a child-rearing technique, the higher will be the child's over-all verbal and numerical achievement in the second grade.

Hypotheses relating parent attitudes to achievement-related personality variables were as follows:

Hypothesis 7. The more rejecting the parent, the lower his or her child will score in measures of self-sufficiency, mastery, social adjustment, and impulse control.

Hypothesis 8. The more restrictive the parent, the lower the child will score on measures of self-sufficiency, mastery, social adjustment, and impulse control.

Hypothesis 9. The more positive demands the parent makes for self-sufficiency, the higher the child will score in measures of self-sufficiency, mastery, over-all social adjustment and impulse control.

Hypothesis 10. The more the parent uses reasoning, the higher the child will score in measures of self-sufficiency, mastery, over-all adjustment, and impulse control.

Our specific hypotheses relating personality variables to the child's school achievement are given below. It might be mentioned that we do not assume that these are antecedent-consequent relationships, but simply that certain personality variables will be related to successful school achievement, and may serve to mediate the influence of parent attitudes.

Hypothesis 11. The measures of self-sufficiency will be directly related to the measures of second grade achievement. The more self-sufficient the child, the better will be his school achievement.

Hypothesis 12. Self-sufficiency will be more highly related to numerical than to verbal achievement.

Hypothesis 13. The measures of mastery will be directly related to the measures of second grade achievement. The more able the child is to master non-academic situations presented in the school setting, the better will be his over-all academic achievement, his verbal, and his numerical achievement in second grade.

Hypothesis 14. The measures of over-all social adjustment (popularity) will be directly related to the measures of second grade achievement. The more popular the child, the better will be his academic achievement.

Hypothesis 15. The measures of over-all social adjustment will be more highly related to numerical than to verbal achievement.

Hypothesis 16. The measures of impulse control will be directly related to the measures of second grade achievement. The more impulse control displayed by the child, the better will be his school achievement in second grade.

CHAPTER III

PROCEDURE

A. THE SAMPLE

1. Selection of the Sample

This research project derives from an interest in doing a follow-up study of the children investigated in the dissertation projects of two of the co-investigators, Nicholas Anastasiow and Lucille Mlodnosky. Both dissertations were under the supervision of the principal investigator, Lucy Rau.

The data for the Mlodnosky study were collected in May and June of 1961 and are reported in a doctoral dissertation titled, "Some Child-Rearing Antecedents of Readiness for School," Stanford University, June 1962. The subjects of this research were kindergarten boys attending 18 different classes in the Palo Alto Unified School District. The mothers of all of the 237 boys enrolled in these classes were asked to participate in this research project by answering questionnaires regarding some of their child-rearing attitudes. One hundred and thirty of the mothers participated in the project. Excluding 28 mothers who were unavailable for various reasons during the time testing took place, this amounted to participation by 62 per cent of the mothers of the boys in the total population of the 18 classrooms. The fathers of 37 of the boys also expressed an interest in filling out a similar parent questionnaire and these data were collected and used in the current study. In addition to the parent questionnaire data, teachers' ratings of various personality and behavior variables were obtained for all of the 237 boys in the total sample. Some of these boys, while not studied in the Mlodnosky research, later became members of the sample used in the Anastasiow project and in our current project studying the boys in second grade.

The data for the Anastasiow study were collected during the 1961-1962 school year and were reported in a dissertation titled, "The Relationship of Sex Role Patterns of First Grade Boys to Success in School," Stanford University, July 1963. The sample used in this study consisted of 98 first-grade boys, selected from a total population of 237 boys on the basis of scores on Anastasiow's Group Toy Preference Test. The total population of 237 boys was essentially the same population used for the Mlodnosky study. These boys were now attending 35 different first grade classes in fifteen elementary schools in the Palo Alto Unified School District. In addition to the data from the Group Toy Preference Test, other measures of sex-typing were collected for the 98 boys in the Anastasiow sample. Parent questionnaire data were collected for the mothers of 79 boys and for the fathers of 72 boys in the study. In addition, teachers' ratings were again obtained for the total population of 237 first-grade boys, as were achievement test data (California Achievement Test, Primary Form W). Thirty-eight of the boys studied in Anastasiow's project were also subjects in the Mlodnosky study.

Our first step in collecting follow-up data on these boys as they reached second-grade was to make up a roster of all of the boys included in both the Mlodnosky and Anastasiow studies and attempt to determine their present whereabouts. By the time the 190 boys participating in the two studies had reached second-grade, 35 of them had moved out of the Palo Alto Unified School District, 4 had transferred to local parochial schools, 9 of the boys had been retained in first grade or were in special training classes, and the remaining 142 boys were attending 39 classrooms in 20 schools in the Palo Alto Unified School District.

After serious consideration, a decision was made to drop from our sample the boys who had been left back in kindergarten and first grade, or who had subsequently been placed in special training classrooms. This had the effect of decreasing the variability of our sample with respect to our main criterion variables: school achievement and ability. Furthermore, because we were doing a follow-up study, there was no opportunity to replace these boys with boys currently in second grade who had previously been left back. However, several factors determined our decision to drop these boys from our sample. Among these was the consideration that many of our central measures were group-administered and it would have been questionable to use scores derived from administering these measures to a class of kindergarten or first grade children, because the measures were scored by comparing the scores of each subject with the scores of others in his class.

Because so many of our measures required group administration, practical considerations of time and expense also resulted in our dropping from the sample classrooms where only one or two of the follow-up boys were in attendance. This resulted in our dropping 41 more boys from our sample, leaving us with a final sample of 104 second grade boys, distributed among 25 classrooms in 16 schools in the Palo Alto Unified School District, an upper-middle class suburban community in the San Francisco Bay Area. The boys in our sample averaged 96 months, or 8 years of age in May 1963, with a standard deviation of 3.79 months.

2. Representativeness of the Sample

How representative is our sample of the total population of boys in the 25 second-grade classrooms studied? As is true of many research projects which involve studying child-rearing variables, the original selection of our sample depended largely on the willingness of parents of our subjects to cooperate with us in carrying out the project. This in itself might have given us a selected sample of boys to begin with. Secondly, because ours is a follow-up study, the exclusion of boys who had been left back, had transferred to parochial schools or moved from the area may have further biased the sample in unknown ways.

For these reasons, we were particularly concerned about the representativeness of our sample and have made some attempt to determine how it compares with the population from which it was drawn with respect to the criterion variables we were studying: ability and achievement.

In Table 1 below are given the Primary Mental Ability and Achievement Test scores obtained from our sample and from the total sample of 288 second-grade boys, on whom these measures were available. There were about 360 boys attending the 25 classrooms which were studied, but because of absences the PMA and Achievement test data were only collected for 288 of the boys. The significance of the differences between the two means was obtained by using the formula for critical ratio given by McNemar (1949) for testing the significance of the deviation of a mean based on a sub-group from the mean of the total group.

Table 3-1. PMA and Achievement Test scores obtained from project sample and total sample of 288 second-grade boys.

Measure	Scores for our Sample			Scores for Total Sample of 2nd Grade Boys			Significance of Mean Difference
	N	Mean	S.D.	N	Mean	S.D.	
PMA Verbal	103	114.45	14.31	288	111.51	15.01	2.49[b]
PMA Space	103	116.19	14.27	288	113.82	14.35	2.10[b]
PMA Number	103	104.01	9.95	288	101.46	10.88	2.18[b]
PMA Perceptual	103	105.89	12.71	288	103.67	12.11	2.34[b]
PMA Total	103	110.61	12.89	288	107.12	15.88	2.39[b]
CAT Arith. Reasoning	100	40.32	4.99	288	39.40	5.21	2.21[b]
CAT Arith. Fundament.	100	41.06	4.34	288	40.82	4.08	.736
Gates Word Reading	103	34.51	11.49	288	32.30	12.09	2.33[b]
Gates Paragraph Reading	103	22.02	7.69	288	19.61	8.19	3.71[a]

[a] <.01 level of significance, 2 tail test

[b] <.05 level of significance, 2 tail test

The results of the comparison indicate that our sample did differ significantly from the total sample. They score higher in all of the achievement and ability tests administered, and this difference was significant in all but one instance. However, it may be noted that although significant, the absolute differences between the means are quite small.

In the following table is a comparison of the Teachers' ratings of the boys in our sample with their ratings of the total population of second grade boys in the 25 classrooms studied. For each of the variables rated, the teachers were to place approximately 20 per cent of the boys in their class in category 1, indicating a low score for that variable; 30 per cent in category 2, indicating a moderately low score; 30 per cent in category 3 and 20 per cent in category 4, indicating a high score on the scale being rated. The teachers, for the most part, were only able to approximate this distribution. The comparison being made below is the difference between the distribution of proportions of children rated in each category in our sample as compared with the total group. In the first column below are listed the proportions distributed in each category for our sample, in the second column the proportions distributed in each category for the total group. The N's on the total sample vary slightly because some of the teachers forgot to rate one or two of their children on some of the scales measured.

Chi squares were obtained for the two distributions which appeared most discrepant and it was found that they were not significant. In other words, as far as the Teachers' ratings of achievement and achievement-

Table 3-2. Relation of Teachers' rating of boys in project sample with the total sample of second grade boys in the 25 classrooms.

Teachers' Rating Scale	Distribution of Proportions for our Sample					Distribution of Proportions for Total Group					χ^2
	N	1	2	3	4	N	1	2	3	4	
Reading Achievement	104	16	19	33	32	359	22	27	28	23	3.43
Numerical Achievement	104	16	18	39	26	360	20	29	29	22	
Success in 2nd Grade	102	16	13	41	30	360	22	27	29	22	2.43
Achievement Motivation	104	20	20	32	28	360	21	29	29	21	
Social Virtues	104	24	25	30	21	360	22	29	28	21	
Poor Self-Control	104	24	25	25	26	360	20	28	29	23	
Physical Ability	104	16	22	35	27	359	21	28	30	21	
Masculinity	104	18	24	32	26	360	20	29	30	21	
Persistence	104	21	23	32	24	360	22	28	29	21	
Popularity	104	20	22	30	28	359	20	29	30	21	
Self-Sufficiency	104	13	23	36	28	360	21	28	29	22	

related personality variables is concerned, our sample appears to be representative of the total sample of 2nd grade boys in the 25 classrooms studied. However, as with the test measures of ability and achievement, the boys in our sample did tend to be rated somewhat higher on the achievement, success and achievement motivation scales than did their peers, even though this difference was not significant.

B. MEASURES

1. Measures of Ability and Achievement

a. The WISC

Our original proposal called for the assessment of our subjects' ability by means of the Thurstone Primary Mental Abilities Test. This test was in fact administered to our sample (see Section b below) along with a larger group of second-graders in Palo Alto, as part of the school district's regular classroom testing program. In addition, very similar measures of our subjects' performance on verbal, spatial and numerical tasks are available from the baseline condition of the distraction procedure. On further reflection, however, it seemed to us that the distinction between a group-administered, paper-and-pencil test of "ability" such as the PMA and our measures of "achievement," for children at this grade level, was a pretty arbitrary one. In fact, as Table 4.3 shows, the PMA and achievement scores are very highly intercorrelated. Since it was part of our original design to obtain a measure of intelligence as independent of our subjects' actual achievement as possible, it seemed desirable to use an individually administered test.

We chose for this purpose the Wechsler Intelligence Scale for Children (Psychological Corporation, 1949). Our choice was based primarily on convenience of administration to boys of this age, and the possibility of deriving meaningful scores (from combinations of subtests as well as the separate Verbal and Performance scales) representing different aspects of intellectual functioning.

The WISC was administered individually to each of our subjects in the usual manner. The boys were tested at school, during regular school hours. The standard set of 10 subtests, plus Digit Span, was used. Most of the sample were tested by one examiner--a Ph.D. psychologist with some clinical experience with children. About 20 of the children were tested by a second examiner, a regular psychologist in the Palo Alto schools. The protocols were scored in the usual manner, so that the following scores were recorded for each subject:

Scaled Scores:

Information
Comprehension
Arithmetic
Similarities
Vocabulary
Digit Span
Picture Completion
Picture Arrangement
Block Design
Object Assembly
Coding

Verbal Scale IQ
Performance Scale IQ
Full Scale IQ

In addition, the following combined scores were derived from the above:

Range of Scaled Scores: This was the difference between the subject's highest and lowest subtest scaled score. It gives some indication of dispersion of performance on the subtests.

Verbal IQ - Performance IQ: This was simply the difference between the subject's overall performance on the Verbal and Performance Scales. A high score indicates better performance on the verbal part of the test.

Two combined scores were based on Cohen's (1959) factor analysis of the WISC subtests. The two most significant factors which emerged from his analyses of the intercorrelations of the subtests at several age levels were "Verbal Comprehension" and "Perceptual Organization." Following his instructions, the following two scores representing these factors were calculated:

> Verbal Comprehension: The mean of the scaled scores on Information, Comprehension, Similarities, and Vocabulary.
>
> Perceptual Organization: The mean of the scaled scores on Block Design and Object Assembly. (Cohen also included Mazes in his score since it had a weak loading on this factor; however, we did not administer this subtest.)

Table 3.3 WISC Scores - Means and Standard Deviations

Var. No.		Mean	S.D.
2	Verbal IQ	113.42	10.98
3	Performance IQ	115.17	13.03
4	Full Scale IQ	115.64	10.85
16	Range of Scaled Scores	8.02	2.25
18	Verbal Comprehension Factor Score	12.23	2.14
19	Perceptual Organization Factor Score	11.95	2.42

b. The PMA

The Primary Mental Abilities Tests, Elementary Form ages 7-11, was administered by the teacher in all the classrooms included in this study. This test is composed of four sub-tests, based on factor scores of verbal, space, number, perception, and a composite total score. The total score is based on a sum of the sub-tests: Verbal Meaning, Spatial Relations, Number Facility, Perceptual Speed. The test used is the 1962 Revision and differs in some respects from the PMA used in the past.

The verbal meaning test is composed of all picture symbols, a total of sixty items. The space sub-test is essentially the same. Number Facility Test has been enlarged to include written "word" problems as well as computational skills. This is a marked change from the 1948 edition and may account for our findings discussed below.

c. Academic Achievement Tests

The measures of reading achievement used in this study are the Gates Primary Reading Tests, Form 1, 1958, Grade 1-2.5, and the Gates Advanced Primary Reading Tests, Form 2, 1958. The primary reading tests consist of three sub-sections: word recognition, sentence reading, and paragraph reading. The advanced test is composed of two sections: word recognition and paragraph reading.

Both tests were administered by the classroom teacher to all the children in his class. The primary test was administered in May of 1962, the advanced in May of 1963. Means and standard deviation for the entire group of boys and girls in classrooms for the 1963 sample are included in the description of our sample, above.

Our measure of arithmetic achievement is the California Achievement Series, 1957 Edition, Form W. This test has two sub-tests, arithmetic reasoning and arithmetic computation. The first sub-test deals with "word" problems which are read aloud to the children. The second test deals with computational skills of adding, subtracting, and multiplying.

2. Measures of Achievement-Related Personality Variables

a. Parents' Reports

Measures of achievement-related personality variables were obtained from a number of sources. Among these were parents' ratings of their childrens' self-sufficiency and impulse control as the parents had observed these in the home.

The twenty-four items measuring these variables were administered to the parents along with the administration of the parent questionnaire on child rearing attitudes and practices, which will be described in a later section (Section 3, below).

The content of the items used for measuring these behaviors was derived in part from the Child-Behavior Descriptions Questionnaire used as a measure of Self-Sufficiency by Mlodnosky (1962) and in a study of identification by Sears, Rau and Alpert (1964). The items were changed somewhat in order to be more relevant to second grade boys and to include items measuring impulse control.

Each item in the questionnaire dealt with one type of self-sufficient behavior or behavior indicative of impulse control. The mother or father was asked to check one of four or five alternatives presented under each item, ranging from a low degree of self-sufficiency or impulse control to a high degree of self-sufficiency or impulse control. If the parent had no opportunity to observe the child in this area of behavior (this occurred very infrequently) she noted this, and the child's score was averaged over the remaining items, discounting the response to this item.

Upon close consideration, the 16 self-sufficiency items which were developed for our study seemed to be divided rationally into two categories: items which measure a child's willingness to perform behaviors in response to the parents' demands for conformity to adult standards, for example: "Cleaning Up Spilled Liquids," in which the behavior measuring high conformity would be, "Nearly always cleans up spilled liquids without having to be told."

A second category seemed to include behaviors indicative of a drive for mastery in areas which seemed of more intrinsic interest to the child himself rather than in response to parental demands for conformity. An example of the items falling in this category would be "Trying New Things," in which the behavior scoring highest on mastery would be: "Eager to try new things on his own. Seldom asks for assistance and would rather not depend on others for help."

The items measuring impulse control include situations such as "Riding in the Car on Long Trips," with the behavior scoring lowest on impulse control being: "He can't seem to sit still. He seems to be all over the car, climbing over the seat, fighting with the other kids and generally acting up. No matter what we do, nothing seems to calm him down."

In summary, then, there were four scales measuring parents' reports of Achievement-Related Personality Variables: Mastery, Conformity, Self-Sufficiency, which was a summary scale including the items from both the Mastery and Conformity categories, and Impulse Control. The internal consistency of these scales for mothers and fathers is given in Table 3.4 below:

Table 3.4 Achievement-Related Personality Variables

	Name of Scale	Number of Items	Internal Consistency[1]
Fathers (N = 67)	Self-sufficiency	16	.68
	Mastery	12	.59
	Conformity	4	.63
	Impulse Control	8	.68
Mothers (N = 80)	Self-sufficiency	16	.52
	Mastery	12	.52
	Conformity	4	.69
	Impulse Control	8	.69

[1] Computed by means of Kuder-Richardson formula 20

The intercorrelations among these scales are given in Table 3.5 below. The number of fathers reporting on these characteristics of their sons is 67, the number of mothers is 80.

Table 3.5 Intercorrelations of Achievement-Related Personality Variables.

		Self-sufficiency	Mastery	Conformity	Impulse-Control
Fathers (N = 67)	Self-sufficiency		.90[1]	.70[1]	.47
	Mastery			.32	.34
	Conformity				.45
	Impulse Control				
Mothers (N = 80)	Self-sufficiency		.78[1]	.70[1]	.54
	Mastery			.15	.28
	Conformity				.48
	Impulse Control				

[1] Part-whole correlation

Thus it may be seen that the internal consistencies of these scales are only moderately high. The correlations among the scales (excluding the part-whole correlations) are moderately low, indicating that we are measuring discrete areas of behavior.

b. Teacher Ratings

The kindergarten teachers rated all of the boys in their classes on seven dimensions in June, 1961. Ninety-one boys later selected for this study were included in this group. The dimensions were: Readiness for First Grade, Constructive Play, Social Virtues, Masculinity, Maturity, Physical Ability, and Outdoor versus Indoor Play. First grade teachers rated all of the boys in their classes on the same dimensions in March of 1962. Ninety-one boys later selected for this study were included in this group. An eighth dimension, Success in First Grade, was added to the first grade ratings. Second grade teachers rated all of the boys in their classes in the spring of 1963. The scales of Numerical Achievement, Persistence, Poor Self-Control, Popularity, Success in Second Grade, Achievement Motivation, Avoidance of Failure, Reading Achievement, were added to the second grade ratings. The Masculinity scale used in second grade differs from the original scale, as discussed below. Samples of all the scales are included in Appendix A.

All groups of teachers rated the children sufficiently late in the year so that it can be assumed that these ratings are based on extensive knowledge of the child's behavior in many areas.

The kindergarten sample included eighteen teachers and two hundred and thirty-two boys. The first-grade sample included thirty-five teachers and two hundred and twenty-nine boys. The second-grade sample included twenty-five classrooms and two hundred and eighty-eight boys. Although ratings were obtained on all boys in these classes, only the ratings of the one hundred and three boys in this sample were utilized.

The rating forms were ones adapted from a form developed by Pauline S. Sears, Stanford University, Laboratory of Human Development.

These scales are a forced normalized distribution which requires the teacher to rate twenty per cent of her class as high, thirty per cent as medium high, thirty per cent as medium low, and twenty per cent as low. Teachers were able to use the scale with little difficulty, although a few teachers reported that they were reluctant to use the low category.

These scales have been used with success in the research of P. S. Sears and in Mlodnosky's (1962) study of "Some Child-Rearing Antecedents of School Readiness." P. S. Sears (1963) reports the following "Fall-Spring" correlations of three first and second grade teachers on comparable scales which may serve as a test-retest reliability measure. These are reported in Table 3.6 below.

Table 3.6: Correlation among Teacher Ratings, Fall-Spring
P. S. Sears' Pursuit of Self Esteem Study, 5-6 Grades

	Boys	Girls
Physical Ability	.73	.71
Social Virtues	.74	.60
Work Habits	.43	.57

Correlations of control group kindergarten teachers and first grade teacher ratings on the subjects in the Anastasiow (1963) sample are reported in Table 3.7. The control kindergarten teachers in his study (rather than the experimental group) were selected as the sample for reliability, as it was felt that they represented a regular kindergarten program.

Table 3.7: Correlations among Control Group Kindergarten and First Grade Teacher Ratings (N = 44)
Anastasiow Sex-Role Study

	Control
Social Virtues	.47**
Masculinity	.33*
Physical Ability	.23
Readiness	.55**
Outdoor vs. Indoor Play	.31*
Constructive Play	.34*
Maturity	.34*

* .05, 2 tail test
** .01, 2 tail test

We can see that for all but one of the scales, the correlations are significant between the ratings of the regular program kindergarten and first grade teachers. The kindergarten and first grade teachers rated the same children nine months apart. Thus, it can be assumed that these measures are reliable instruments, considering the one correlation represents the ratings of two different groups of teachers of the same sample of boys over this span of time.

The correlations of kindergarten, first grade, and second grade teachers' ratings for comparable scales are reported below.

Table 3.8: Intercorrelations of Kindergarten, First and Second Grade Teachers' Ratings*

	First Grade	Second Grade
Kindergarten - Social Virtues	.40	.33
First Grade - Social Virtues	---	.52
Kindergarten - Physical Ability	.39	.45
First Grade - Physical Ability	---	.48
Kindergarten - Readiness	.55	---
Kindergarten - Readiness with Success	.50	.49
First Grade - Success	---	.66
Kindergarten - Masculinity	.44	.32
First Grade - Masculinity	---	.37

* All significant <.01 level.

The Scales

1. Readiness for First Grade, as used in this scale, was a loosely defined concept leaving the teacher free to apply his own definition. It included his judgment of how well the boy adjusted to kindergarten, as well as his prediction as to how well the child would do

the following year. The scale read as follows: "In my judgment this child is ready for first grade. I predict he will be able to succeed in first grade."

2. and 3. Success in First Grade and Success in Second Grade are closely allied scales constructed to measure in first and second grades what the Readiness scale represented in kindergarten. These scales read as follows: "I feel that this child has succeeded in first (second) grade. He has been able to handle the things that were expected of him."

4. and 5. The Maturity scale was a measure of self-sufficiency in the classroom. In discussing this scale with teachers before they rated the boys, the independence and self-care aspects of the scale were stressed. The child's ability to take care of himself in social situations was differentiated from the scale of Social Virtues, which stressed how smoothly and easily the child got along with others. The scale read: "This child is very self-possessed and socially poised for his age. He is sure of himself and goes ahead on his own. He is emotionally mature." At second grade this scale was changed to describe Self-Sufficiency more directly. It read: "This child is self-sufficient. He usually goes ahead on his own and does his work without seeking an unusual amount of help from his teachers or his classmates."

6. The Constructive Play scale was designed to measure the child's purposeful activity as well as the degree to which he was able to conceive of and follow through on his plans. The scale read: "This child is constructive in his play. His play is purposeful. It is not aimless or

disorganized. He is able to make plans and carry them out without being easily diverted or side-tracked. He is able to make full use of the potentialities of each toy and uses a wide variety of play materials."

7. The Social Virtues scale was constructed to measure the ease with which the child established and maintained interpersonal contacts with his peers and adults. It was differentiated from maturity by its emphasis on the processes, rather than the level, of social interaction. The scale read: "This child is high in the social skills, traits that make getting along with others a smooth and comfortable process. He observes the rules of social conduct in the broadest sense. He is sensitive to others' feelings, helpful, courteous, cooperative, and is kind to others and tries to make them feel at ease. His relationships with others are usually comfortable and harmonious."

8. Masculinity, as a scale, is an attempt to measure those stereotypic socially desirable qualities easily perceived by the teacher. It is defined in terms of its behavioral manifestation in the classroom. It reads: "This child is 'all boy.' He is 'rough and ready.' He enjoys playing with cars, trucks, and blocks. He is often the Daddy, policeman, sailor or train engineer, i.e., he takes the masculine role in play activities."

Although the intent to measure the stereotypic socially desirable qualities of masculinity remained the same, the behaviors of the child which would reflect this trait are not the same in second grade as they are in kindergarten. Thus, the definition was changed to read: "He is a sturdy child. He is direct in his approach to others. He is "tough" without necessarily being aggressive. He displays vigor in his participation in classroom and outdoor activities. He prefers to play boys' games. He is 'all boy'."

9. Physical Ability was constructed to measure those physical competencies of the child as displayed in play or school activities. The scale reads: "This person gives the appearance of being 'built for' physical activities. He is strong and has a high energy level. He is agile and quick and has a great deal of stamina. He has both large and small muscle coordination, and his accuracy in movement indicates good eye-hand coordination. His movements are graceful, not awkward."

10. Outdoor versus Indoor Play is a scale designed to measure these characteristics hypothesized by the Sears Identification Project to be correlated with sex-role adoption. Masculine boys were hypothesized to prefer to play outdoors. The scale reads: "This child prefers to play at outdoor games rather than indoor games. He is eager to go outdoors to play."

11. and 12. Numerical Achievement and Reading Achievement scales were measures of a teacher's judgment of academic achievement in each area despite intelligence or other academic talents. Numerical Achievement reads: "He has achieved skill in dealing with numbers. He has a knowledge of number facts such as counting, adding and subtracting. He is able to deal successfully with story problems." The Reading Achievement scale reads: "He reads well for his grade level. He has attained skills

in letter recognition. He has a large reading vocabulary and has developed word attack skills and reading comprehension at a high level."

13. Persistence, as a scale, was an attempt to measure the child's staying power in spite of his intellectual or academic talents. It read: "He is persistent. When he starts a task he will almost always stick to it until the job is completed. Even though he encounters difficulties with his work he doesn't give up easily."

14. Poor Self-Control was a scale attempting to measure the behavioral manifestations of (low) impulse-control. The scale read: "This child has little self-control. He has difficulty following the rules of the classroom. He can't seem to sit still. He is always getting out of his seat and moving about the room. He is not able to keep his mind on his work. He often talks when he is supposed to be working and is bothersome to others in the classroom."

15. Popularity, as a scale, attempted to determine, by teachers' ratings, a sense of peer acceptance regardless of positive or negative behaviors. The scale read: "He is popular with the other children. They like him."

16. Achievement Motivation, as a scale, attempts to measure underlying press for achievement regardless of output. Our scale measures the observable manifestations of desire for academic success. The scale reads: "This child is highly motivated to do well in his school work. He often shows concern about his performance and tries to do his very best."

17. The Avoidance of Failure scale was designed to measure a

variable distinct from but related to Achievement Motivation and Persistence, the degree to which the child is threatened by failure and attempts to avoid it. It attempted to measure this behavior without reference to intellectual ability. The scale read: "He is reluctant to try new things because he is afraid he won't succeed at them. If he fails at something the first time he might get quite upset and be unwilling to continue. In placing children on this scale consider how often the child has exhibited this behavior. Give the high score only to those children who do this sort of thing quite frequently."

c. Peer Ratings

Our proposed study called for ratings by peers of academic achievement and of the four areas of achievement-related personality variables: self-sufficiency, impulse-management, mastery and social adjustment. (We had originally hoped to obtain self-ratings on the same items used for the peer-ratings of these variables, but this proved to be unfeasible.) The peer-rating instrument used was an adaptation of the Peer Nomination Inventory developed by Wiggins and Winder (1961) and revised by Maccoby and Rau (1963) for use in a study of differential abilities in fifth-grade children. The PNI is essentially a measure of social reputation. Descriptive items which represent aspects of the behavioral dimensions to be measured are presented to the members of a class or other social group, and they are asked to indicate all members of the class to whom each item applies. A subject's score on an item is then the total number of nominations he receives from other members of the class, and his score on a scale is the sum of his scores on the items composing it. (Since the number of judges, and therefore the number of possible nominations for an item, will vary depending on class size, a given child's score on an item will be converted to the proportion of possible nominations he received.)

In adapting this technique for use in this project, two problems presented themselves: that of a format which would be suitable for second-graders, and the selection of items which would be relevant to the behavioral dimensions we wished to measure. We solved the first problem by printing the items in primary type, one at the top of each page of the test booklet, with the names of all the boys in the class to which it was being administered listed below the item, also in primary type. The names were repated on each page. As the class progressed through the booklet, each item was read aloud and the children were told to draw a line through the names of all the boys in the class to whom the item applied. (Girls' names were not listed.) Boys could check themselves if they wished, but some seemed reluctant to do so, and self-nominations were not counted in scoring. The exact instructions used and a sample page from the PNI booklet are included in Appendix B. Items which proved difficult for a number of the children in our pre-test classes were eliminated. In general this form of the instrument seemed quite easy for most of the second-graders in the classes included in our study to use. It should be borne in mind, however, that the average IQ in this population is about a standard deviation above the mean of the general population, and there were very few youngsters of below average ability. The final 48-item form which we used took about forty minutes to complete in most classes, and was probably somewhat longer than desirable for use with children of this age.

The pool of items selected to represent the behavioral dimensions we wished to measure came from a variety of sources. We included a few of the original PNI items and items from the Maccoby-Rau revision. Some items were rationally constructed or collected through information observation of children of this age. In addition we conducted a number of brief interviews with a number of children, several from each of three second-grade classes, whose teachers had suggested they would be good informants. We had asked the teachers to give us the names of other children in the class who seemed to represent the extremes on the behavioral dimensions we had in mind, e.g., self-sufficiency or impulsivity. We then very informally obtained descriptions of these children from our informants, and recorded the conversations by means of a battery-powered portable tape-recorder. We also used these interviews to check on the appropriateness of some of our rationally constructed items for children of this age. Items were culled from the tapes of the interviews, preserving the wording used by the children as much as possible. It was our hope thus to obtain items which were as much as possible in the natural language used by children of this age to describe each others' behavior.

From the total pool of items obtained by these means, 78 were sorted (with perfect or near-perfect agreement among three judges) into the following categories:

1. The "Good Boy" scale: items descriptive of generally socially-approved-of behavior in the classroom, doing what one is supposed to do. 7 items.

2. Impulsivity. 22 items. These were subdivided into the following groups:
    - a. Interpersonal bothersomeness, items describing behavior which is a nuisance or a distraction to others. 16 items.
    - b. Hyperactivity, an inappropriately high level of physical mobility in the classroom. 4 items.
    - c. Sloppiness. 2 items.
3. Academic Achievement. Items referring to doing well at aspects of school work, such as reading, spelling, numbers. 6 items.
4. Mastery. 15 items. Subdivided into:
    - a. Items referring to curiosity, liking to find out about new things. 3 items.
    - b. Items referring to self-confidence, being sure of oneself. 3 items.
    - c. Items referring to competence at non-academic tasks, but observable in the school setting, e.g., being "good at games." 9 items.
5. Items referring to persistence. 5 items.
6. Descriptions of help-seeking behavior in relation to the teacher. 15 items.
7. Items which seemed to refer to a more passive form of dependency, or to immaturity. 6 items.
8. Items referring to social withdrawal and non-participation, inhibited behavior. 6 items.
9. Statements that described the subject as liked by the judge by himself or popular with the other children. 6 items.

These 78 items were assembled in random order and divided into two sets of 40 and 38 items. These sets of items were then administered on two occasions to each of five second-grade classes which did not contain any of the members of our sample. The responses of these pretest classes, a total of 67 boys and 46 girls, were tabulated separately for boy and girl judges. The number of social objects being rated was equal to the number of boys in these classes, i.e., 67. The scores obtained from each class were converted into proportions of the number of judges, to make them equivalent from class to class, and to make it possible to combine the data from the five classes. The first step in the item analysis was to obtain the frequencies of responses given to each item and the correlations between the boys' and girls' judgments on each item. All items receiving less than 20 per cent of the possible total number of checks were eliminated, as being of too high a difficulty level and therefore not contributing sufficiently to scale variance. Also all items having a correlation of less than .50 between boys' and girls' judgments were eliminated, since in our final scoring we wished to combine the judgments of all the children in a class to obtain one score on each item for each subject. In addition a few items were eliminated because they had seemed to pose difficulties for some of the children during the pre-test administration, or because they appeared to duplicate other items too closely. These eliminations reduced the pool of items to 48, each of the original 9 scales now being represented by from 3 to 14 items. These 48 items were then re-scored, combining boys' and girls' judgments to obtain a single score on each item for each of the 67 boys in these classes.

The data from the original set of 78 items was also subjected to an item analysis, intercorrelating all items and rationally-constructed scale totals. At this point we were confronted with a very serious difficulty. The rationally constructed scales appeared to have good internal consistency (items correlating quite highly with scale total), but they proved also to be very highly intercorrelated, and many items originally assigned to one scale seemed equally highly related to several other scales. The total scores for the six "positive" scales (those describing desirable characteristics), Good Boy, Academic Achievement, the Mastery subscales, Persistence and Likeability, intercorrelated positively between .77 and .92. The remaining "Negative" scales intercorrelated among themselves between .42 and .92; these included the Impulsivity subscores, Help-seeking, Passive Dependency and Withdrawal. The correlations between the scales in the two groups ranged from 0 to -.60, and were mostly negative and of substantial size. It seemed at this point as if we must reach the conclusion that children of this age, when asked to describe their peers with this sort of instrument, are unable to make very fine discriminations among various behaviors or attributes, but simply describe some individuals in generally positive terms and others as exhibiting all forms of undesirable behavior. The generally positive or negative character of a second-grade boy's social reputation with his peers may be a very meaningful variable, but we had hoped to derive from these peer-ratings more differentiated descriptions of specific traits.

A further inspection of the pre-test data indicated that not only did all "positive" and all "negative" groups of items tend to intercorrelate highly among themselves, but also that all items appeared to have substantial correlations, ranging from .10 to .80 with the total score for all of the original 78 items. In other words there seemed to be a general "visibility" factor operating, so that some subjects were generally more likely to receive nominations than others, no matter what the content of the specific item. This seemed to be another very general characteristic of social reputation which obscured the more specific variance attributable to particular behavioral characteristics.

In view of this situation, we decided to perform an empirical item analysis based on the intercorrelations among our reduced set of 48 items, after the variance attributable to "visibility" and to "positive" versus "negative" social reputation had been partialled out of the item intercorrelations. For this purpose a partial correlation program for the IBM 7090 was derived by G. W. Walter, in consultation with Quinn McNemar. Each item was then correlated with total score over all the items, and the resulting correlations partialled out of the correlations of each item with each other item in the set of 48. The usual formula for partial correlation was used, in this case:

$$r_{i_1 i_2 \cdot t} = \frac{r_{i_1 i_2} - r_{i_1 t}\, r_{i_2 t}}{\sqrt{1 - r^2_{i_1 t}}\ \sqrt{1 - r^2_{i_2 t}}}$$

The items were then subdivided into two equal sets of 24 "positive" items and 24 "negative" items, and for each of these subsets the same partial correlation procedure was followed. In this case the variance attributable to membership in the positive or negative subset of items was extracted from the residual correlations resulting from the first partialling procedure. In other words, the scores entering into the second set of item intercorrelations were the deviation-from-regression scores of $i_{1.....48}$ on the "t" (positive) and $i_{25.....48}$ and "t-" (negative).

The final set of residual item intercorrelations was then examined, and sub-sets of items isolated which showed significant intercorrelations among themselves and did not seem to correlate with items in other clusters. The residual item intercorrelations were, of course, all fairly low, since a great deal of the original item variance had been extracted by the double partialling procedure. However, it was possible to isolate subsets of items which met acceptable criteria of internal consistency for the residual scores. In several cases these sets of items corresponded quite well to the original rational scales. In other cases they did not, and new titles were assigned to the resulting scales. The items comprising the nine new scales, their original (raw score) and their residual intercorrelations are listed in Table 3.9,A through I.

This completed our analysis of the pre-test data. It was our intention to score the peer-ratings obtained for the children in our sample according to the empirically derived scales just described. Some slight modifications in the composition of the scales were made on the basis of the data obtained for the total group of second-grade boys of which our sample was a prt. These are described below.

Table 3.9: Empirically derived PNI Scales, Pre-test data:
Item intercorrelations, raw scores and residuals.
(N = 67)

Scale A: Attentiveness

	Raw Scores					Residuals			
Item	3	6	7	12		3	6	7	12
3	---	.85	.84	.89	3	---	.18	.20	.33
6	---	---	.88	.90	6	---	---	.40	.42
7	---	---	---	.87	7	---	---	---	.24
12	---	---	---	---	12	---	---	---	---

Scale B: Academic Achievement

	Raw Scores								Residuals						
Item	14	17	21	26	31	33	45		14	17	21	26	31	33	45
14	---	.69	.57	.80	.80	.79	.80	14	---	-.01	.22	.17	.25	.07	.22
17	---	---	.85	.85	.82	.84	.85	17	---	---	.37	.22	.26	.19	.16
21	---	---	---	.85	.78	.84	.81	21	---	---	---	.28	.06	.21	-.05
26	---	---	---	---	.84	.88	.88	26	---	---	---	---	.06	.12	.05
31	---	---	---	---	---	.90	.85	31	---	---	---	---	---	.36	.13
33	---	---	---	---	---	---	.87	33	---	---	---	---	---	---	.03
45	---	---	---	---	---	---	---	45	---	---	---	---	---	---	---

Scale C: Conformity

	Raw Scores								Residuals						
Item	29	32	35	37	39	40	42		29	32	35	37	39	40	42
29	---	.74	.86	.86	.91	.86	.92	29	---	.26	.39	.02	.23	.20	.27
32	---	---	.75	.72	.81	.75	.79	32	---	---	.19	.02	.33	.32	.35
35	---	---	---	.89	.87	.79	.85	35	---	---	---	.49	.23	.15	.20
37	---	---	---	---	.90	.83	.89	37	---	---	---	---	.17	.12	.13
39	---	---	---	---	---	.87	.94	39	---	---	---	---	---	.24	.34
40	---	---	---	---	---	---	.91	40	---	---	---	---	---	---	.49
42	---	---	---	---	---	---	---	42	---	---	---	---	---	---	---

Table 3.9: (continued)

Scale D: Popularity

	Raw Scores					Residuals			
Item	5	10	20	36		5	10	20	36
5	---	.54	.74	.79	5	---	-.20	.30	.28
10	---	---	.70	.75	10	---	---	.23	.19
20	---	---	---	.78	20	---	---	---	.25
36	---	---	---	---	36	---	---	---	---

Scale E: Impulsivity 1

	Raw Scores							Residuals					
Item	4	16	22	34	38	43		4	16	22	34	38	43
4	---	.79	.76	.63	.75	.68	4	---	.27	.12	-.09	.12	.02
16	---	---	.90	.80	.85	.76	16	---	---	.51	.29	.25	.06
22	---	---	---	.78	.86	.78	22	---	---	---	.19	.29	.12
34	---	---	---	---	.81	.64	34	---	---	---	---	.35	-.10
38	---	---	---	---	---	.82	38	---	---	---	---	---	.29
43	---	---	---	---	---	---	43	---	---	---	---	---	---

Scale F: Impulsivity 2

	Raw Scores					Residuals			
Item	25	28	41	44		25	28	41	44
25	---	.74	.82	.79	25	---	.19	.42	.22
28	---	---	.71	.83	28	---	---	-.14	.23
41	---	---	---	.78	41	---	---	---	-.08
44	---	---	---	---	44	---	---	---	---

Table 3.9 (continued)

Scale G: Help-Seeking

	Raw Scores				Residuals		
Item	23	27	46		23	27	46
23	---	.77	.83	23	---	.19	.28
27	---	---	.79	27	---	---	.16
46	---	---	---	46	---	---	---

Scale H: Passive Dependency

	Raw Scores					Residuals			
Item	8	18	24	47		8	18	24	47
8	---	.89	.75	.67	8	---	.24	.15	.06
18	---	---	.76	.70	18	---	---	.15	.09
24	---	---	---	.66	24	---	---	---	.22
47	---	---	---	---	47	---	---	---	---

Scale I: Social Inhibition

	Raw Scores				Residuals		
Item	9	19	48		9	19	48
9	---	-.26	-.17	9	---	.21	.24
19	---	---	.69	19	---	---	.27
48	---	---	---	48	---	---	---

2

Our final 48-item version of the PNI was administered in each of the 25 second-grade classrooms which contained members of our sample. The names of all the boys in each class were reproduced in the test booklet, yielding a total sample of 361 boys for whom we have peer-ratings. The nominations of boys and girls in the class were combined, yielding a single score for each subject on each item. The scoring procedure was the same as that described above for the pre-test form. The "raw" scores on the items (actually proportions of the possible nominations in each class, excluding self-checks) were then intercorrelated, and these item intercorrelations were then subjected to the double partialling procedure described above. The intercorrelations of residual scores of the items assigned to each scale on the basis of the analysis of the pre-test data was examined. In most cases the scales held up quite well. There were a few discrepancies, and since the data based on an N of 361 would seem to provide more stable information about the characteristics of the item pool, some revisions of the scales were made, even though this is a violation of strict cross-validation procedure. The revisions consisted of dropping a few items from several of the scales, adding one or two, and combining the two "Impulsivity" scales, since the items constituting them seemed to correlate about equally highly with each other in the final data. The final sets of items and their original and residuation intercorrelations are shown in Table 3.10, A through I.

Table 3.10: Empirically derived PNI Scales, Data from Total Sample
Item intercorrelations, raw scores and residuals.
(N = 361)

Scale A: Attentiveness

	Raw Scores				Residuals		
	6	7	12		6	7	12
6	---	.92	.91	6	---	.46	.24
7	---	---	.90	7	---	---	.20
12	---	---	---	12	---	---	---

Scale B: Academic Achievement

	Raw Scores							Residuals					
	3	14	17	26	31	45		3	14	17	26	31	45
3	---	.89	.81	.85	.89	.86	3	---	.35	.04	.01	.40	.09
14	---	---	.87	.87	.87	.89	14	---	---	.26	.06	.23	.22
17	---	---	---	.91	.83	.87	17	---	---	---	.40	.00	.13
26	---	---	---	---	.85	.89	26	---	---	---	---	.00	.12
31	---	---	---	---	---	.89	31	---	---	---	---	---	.24
45	---	---	---	---	---	---	45	---	---	---	---	---	---

Scale C: Conformity

	Raw Scores							Residuals					
	29	33	35	37	40	42		29	33	35	37	40	42
29	---	.90	.81	.85	.89	.88	29	---	.30	.02	-.01	.31	.15
33	---	---	.87	.91	.90	.92	33	---	---	.13	.16	.19	.22
35	---	---	---	.88	.85	.88	35	---	---	---	.26	.17	.22
37	---	---	---	---	.88	.91	37	---	---	---	---	.16	.19
40	---	---	---	---	---	.89	40	---	---	---	---	---	.19
42	---	---	---	---	---	---	42	---	---	---	---	---	---

Table 3:10 (continued)

Scale D: Popularity

	Raw Scores						Residuals				
	1	5	10	20	36		1	5	10	20	36
1	---	.75	.64	.74	.69	1	---	.41	.03	.28	.07
5	---	---	.58	.69	.60	5	---	---	.02	.26	-.01
10	---	---	---	.79	.84	10	---	---	---	.27	.42
20	---	---	---	---	.81	20	---	---	---	---	.25
36	---	---	---	---	---	36	---	---	---	---	---

Table 3:10 (continued)

Scale E: Impulsivity

Raw Scores

	2	4	13	16	22	25	30	34	38	41	43	44
2	---	.84	.82	.86	.87	.71	.83	.84	.84	.82	.82	.82
4	---	---	.84	.85	.83	.70	.80	.81	.81	.83	.81	.81
13	---	---	---	.87	.85	.70	.86	.85	.85	.79	.84	.83
16	---	---	---	---	.91	.76	.88	.91	.91	.85	.84	.90
22	---	---	---	---	---	.74	.90	.89	.89	.86	.86	.88
25	---	---	---	---	---	---	.74	.78	.74	.72	.73	.79
30	---	---	---	---	---	---	---	.90	.89	.84	.88	.87
34	---	---	---	---	---	---	---	---	.91	.85	.87	.89
38	---	---	---	---	---	---	---	---	---	.86	.87	.89
41	---	---	---	---	---	---	---	---	---	---	.84	.86
43	---	---	---	---	---	---	---	---	---	---	---	.87
44	---	---	---	---	---	---	---	---	---	---	---	---

Scale F: Impulsivity

Residuals

	2	4	13	16	22	25	30	34	38	41	43	44
2	---	.30	.09	.16	.18	-.05	-.07	.05	.06	.11	.00	.02
4	---	---	.28	.22	.08	-.04	-.07	.00	.05	.21	.06	.04
13	---	---	---	.16	.02	-.09	.09	.05	.10	-.09	.07	-.01
16	---	---	---	---	.22	.10	.04	.30	.32	.09	.06	.24
22	---	---	---	---	---	-.07	.07	.09	.11	.08	-.03	.06
25	---	---	---	---	---	---	-.01	.17	.06	-.01	-.05	.25
30	---	---	---	---	---	---	---	.14	.16	-.02	.16	.04
34	---	---	---	---	---	---	---	---	.36	.03	.12	.18
38	---	---	---	---	---	---	---	---	---	.17	.14	.25
41	---	---	---	---	---	---	---	---	---	---	.08	.19
43	---	---	---	---	---	---	---	---	---	---	---	.14
44	---	---	---	---	---	---	---	---	---	---	---	---

Table 3:10 (continued)

Scale G: Help-Seeking

	Raw Scores				Residuals		
	23	27	46		23	27	46
23	---	.84	.83	23	---	.38	.34
27	---	---	.82	27	---	---	.30
46	---	---	---	46	---	---	---

Scale H: Passive Dependency

	Raw Scores					Residuals			
	8	18	24	47		8	18	24	47
8	---	.92	.72	.62	8	---	.38	.24	.10
18	---	---	.66	.61	18	---	---	-.06	.00
24	---	---	---	.64	24	---	---	---	.36
47	---	---	---	---	47	---	---	---	---

Scale I: Social Inhibition

	Raw Scores				Residuals		
	9	19	48		9	19	48
9	---	-.47	-.02	9	---	.33	.41
19	---	---	.43	19	---	---	.27
48	---	---	---	48	---	---	---

Our final set of peer-rating scales, then, comprised eight: Attentiveness, Academic Achievement, Conformity, Popularity, Impulsivity, Help-Seeking, and Social Inhibition (this seemed a more appropriate title than the original one of "Withdrawal"). Two sets of scores were calculated for these scales: (1) the sum of the "raw" (percentage) scores of the items comprising the scale and (2) the sum of the "residual" (deviation-from-the-regression-line for the second partial) scores. In addition, the scores for two individual items which did not fall into any of the scales, 15 and 32, were included in our list of peer-rating variables, since they seemed to represent ratings of "self-confidence" and of "curiosity", which were originally thought of as theoretically important aspects of "Mastery." The raw score totals for all positive items, all negative items and all items were also included as scores. Thus a total of 10 scores based on residuals and 13 scores based on item raw scores comprised our list of peer-rating variables.

The item intercorrelations for the raw score scales were so high (see Table 3.10) as to make the calculation of reliabilities based on internal consistency superfluous. This was not the case for the residual scales, however, and Kuder-Richardson reliabilities were computed for them and are shown in Table 3.11. They are not high, ranging consistently around .55, but are at least respectable, and make it seem plausible to suppose that these residual scales represent some fairly stable characteristics of our subjects which may be found to correlate significantly with other measures.

Table 3:11

PNI Residual Scales: Reliabilities

	Project Sample N = 104		Total Sample N = 361	
Scale	Mean*	Reliability**	Mean*	Reliability**
1. Attentiveness	2,992.8	.5790	2,998.5	.5694
2. Academic Achievement	6,064.1	.6108	5,997.0	.5416
3. Conformity	5,972.1	.4209	5,997.0	.5528
4. Popularity	4,964.0	.4082	4,997.5	.5502
5. Impulsivity	12,040.0	.6689	11,994.0	.5441
6. Help-Seeking	2,986.3	.4810	2,998.5	.6052
7. Passive Dependency	3,985.2	.5438	3,998.0	.4526
8. Social Inhibition	2,987.6	.6394	2,998.5	.6063

* Based on the sums of the deviation-from-regression item scores.
** Calculated using Kuder-Richardson formula 20.

On the other hand, the interpretation of the meaning of these residual scale scores is not a simple matter. This will perhaps be clarified by an inspections of Table 3:12 A and B. This table shows the intercorrelations of the two sets of PNI scales, those based on raw scores and those based on residual scores. It is clear that the raw-score scales comprise two distinct sets: The four "positive" scales, Attentiveness, Academic Achievement, Conformity, and Popularity are highly intercorrelated positively. Three of the "negative" scales, Impulsivity, Help-Seeking and Passive Dependency, also intercorrelate highly, and are all highly negatively correlated with the four "positive" scales. The Social Inhibition scale is relatively independent of both clusters although it tends to be positively correlated with the "positive" scales. The items comprising this scale should probably have been classified as positive rather than negative for the double-partialling procedure, although they are few enough not to cause much difficulty in the outcome of the residual scores for other items. The two single-item scales, Self-confidence and Curiosity, obviously belong with the socially desirable cluster of behaviors.

The effects of the double-partialling procedure on these scale intercorrelations are evident in Table 3:12 B. In order to clarify the dimensions represented by the residual scales, a principal axis factor analysis was performed on the intercorrelations of the residual scale scores and rotated to a varimax solution. Two significant factors emerged; the loadings of the scales on these two factors are shown in Table 3:13. The Impulsivity and Social Inhibition scales now appear at opposite ends of a bipolar dimension, which may be thought of as representing impulse

Table 3:12 Peer Rating Scales - Intercorrelations

A. Raw Scores		168	169	170	171	172	173	174	175	176	177	178	179
Attentiveness +	167	.89	.95	.77	-.79	-.74	-.74	.45	.76	.44	.95	-.77	.49
Academic Achievement +	168	---	.92	.82	-.62	-.70	-.65	.30	.81	.56	.97	-.64	.64
Conformity +	169	---	---	.84	-.73	-.70	-.69	.42	.78	.51	.98	-.71	.60
Popularity +	170	---	---	---	-.41	-.49	-.48	.23	.76	.66	.89	-.41	.76
Impulsivity -	171	---	---	---	---	.83	.86	-.34	-.45	-.02	-.66	.98	.06
Help-Seeking -	172	---	---	---	---	---	.85	-.11	-.52	-.05	-.69	.90	-.04
Passive-Dependency -	173	---	---	---	---	---	---	-.09	-.46	-.06	-.66	.93	.02
Social Inhibition	174	---	---	---	---	---	---	---	.32	.26	.37	-.20	.30
Self-Confidence	175	---	---	---	---	---	---	---	---	.59	.83	-.45	.66
Curiosity	176	---	---	---	---	---	---	---	---	---	.59	.01	.76
	177	---	---	---	---	---	---	---	---	---	---	---	---
Positive Total	178	---	---	---	---	---	---	---	---	---	---		-.66
Negative Total	179	---	---	---	---	---	---	---	---	---	---		.67
Grand Total													.10

B. Residuals		158	159	160	161	162	163	164	165	166
Attentiveness	157	-.33	.12	-.27	-.52	.33	.26	.46	-.07	-.11
Academic Achievement	158	---	-.43	-.47	.39	-.40	-.00	-.29	.01	-.11
Conformity	159	---	---	-.32	-.48	.39	.24	.43	-.17	-.20
Popularity	160	---	---	---	.28	-.04	-.31	-.34	-.09	.07
Impulsivity	161	---	---	---	---	-.62	-.51	-.81	-.02	.08
Help-Seeking	162	---	---	---	---	---	-.01	.33	-.06	.02
Passive Dependency	163	---	---	---	---	---	---	.31	.14	-.18
Social Inhibition	164	---	---	---	---	---	---	---	-.01	-.05
Self-Confidence	165	---	---	---	---	---	---	---	---	-.01
Curiosity	166	---	---	---	---	---	---	---	---	---

Table 3:13. Factor Analysis of PNI Residual Scales

Scale	Communality	Loadings Factor 1	Factor 2
1. Attentiveness	.4472	.6637	----
2. Academic Achievement	.8909	-.5009	-.7988
3. Conformity	.6477	.5606	----
4. Popularity	.8809	(-.3474)	.8655
5. Impulsivity	.8932	-.9283	----
6. Help-Seeking	.5724	.6683	----
7. Passive Dependency	.6012	.4053	----
8. Social Inhibition	.6950	.8179	----

expression versus inhibition, or perhaps simply activity versus passivity. Academic Achievement as well as Popularity now appear as associated with the active or impulsive end of the dimension, whereas Help-Seeking, Attentiveness, Conformity, and Passive Dependency all appear to be related to the inhibited or passive end. The only other significant relationship appears to be the negative one between Academic Achievement and Popularity. This latter relationship, as well as the negative correlations of Academic Achievement with Attentiveness and Conformity and its positive association with Impulsivity, are opposite to our original predictions.

These relationships are undoubtedly the product of partialling out of these scales their common variance, which represented generally positive social reputation or generally socially desirable behavior. We would thus expect our original hypotheses about the antecedents and correlates of academic achievement to be more clearly, if undiscriminatingly, supported by the raw-score peer-rating scales. We will therefore use both sets of scores in our further data analysis. It is of some interest to note at this point, however, that when the variance attributable to generally positive social reputation is partialled out, peer ratings of academic achievement appear to be related negatively to popularity (possibly in this case representing classroom behavior oriented towards social contacts rather than work), and positively to impulse-expression or activity rather than to inhibition. One might very tentatively hazard the interpretation that the second-grade boy who is viewed by his classmates as academically successful will also be seen by them as possessing most other socially desirable characteristics, but beyond that will be seen as assertive and expressive rather than passive and inhibited and/or as more interested in work than in social "fun and games" in the classroom.

d. Intelligence Examiner's Ratings of Behavior

In addition to the scores derived from the WISC performance itself, the examiners who administered the individual intelligence test rated various aspects of the subjects' behavior during the testing. It is ordinarily assumed in clinical practice that a child's behavior during the administration of an intelligence test provides a sample of his reaction to a novel, intellectually challenging situation in which he must interact with a (usually) strange adult, and which may be somewhat anxiety-arousing. The rating scales were designed to quantify various aspects of these reactions, and also to record the examiner's estimate of the probable reliability of the test score for a particular child. (Appendix C)

With the exception of the Reliability rating, these are all 5-point scales, with the high, low and mid-points specified. Twenty-six of the WISC administrations (19 by one examiner and 7 by the other) were observed by members of a small graduate class in Educational Guidance.* These observers also rated the child's behavior according to the seven variables. The correspondence between these observers' and the examiners' ratings provided our measure of scoring reliability for these rating scales. These reliabilities, expressed in terms of per cent agreement, are as follows:

Table 3:14. IQ Tester's Ratings - Inter-rater Reliabilities

	Per cent Perfect Agreement	Per cent Agreement within 1 Scale Point
1. Attentiveness	46.15	96.15
2. Interest	46.15	100.00
3. Persistence	46.15	92.30
4. Interpersonal Ease	46.15	96.15
5. Masculinity	69.23	100.00
6. Concern or Anxiety	61.53	96.15
7. Reliability	96.15	100.00

---

*We would like to express our appreciation to Dr. Pauline Sears and the members of her class for their help in this part of the project.

It is evident that reliabilities for these ratings, adopting the criterion of agreement within one scale point, are quite satisfactory. The degree of correspondence between these ratings and other measures of similar aspects of our subjects' behavior (e.g., teacher-ratings) will be discussed in a later section.

e. Experimental Measures

(1) Susceptibility to distraction. One of the primary requirements of academic work in the classroom setting is that the child be able to focus his attention on the task at hand and continue to work at it in the face of a great many potentially distracting stimuli, both internal and external. In the typical classroom situation, there is always a certain amount of noise, of movement, of actual and potential social interaction between children and with the teacher. There are obvious individual differences in the susceptibility of second-graders to these distractions, or conversely in their ability to shut out distraction and to continue to perform academic tasks in spite of the noise coming in from the playground or the temptation to listen to what the teacher is saying to someone else in the class.

We conceive of the capacity to resist distraction as one important aspect of the development of impulse control, which has a significant effect on academic performance. Maccoby and Rau (1963) found that among fifth-grade children, distractibility is significantly negatively related to numerical ability, specifically. (On the other hand, the children in their sample who were relatively high in verbal ability but low in number ability were more distractible.) Therefore we predicted that at second-grade distractibility would be generally negatively related to academic success, but particularly so to numerical achievement.

An additional prediction was that susceptibility to distraction would be negatively related to self-sufficiency. In the Maccoby-Rau project, it was found that the more distractible children were more dependent on adults and had mothers who gave more direction and help than the mothers of less distractible children. A subsequent study by Canon (1963) demonstrated that when the distractor is an interpersonal one (as was true in both the Maccoby-Rau and the present study), susceptibility to distraction is increased by a preceding period of social isolation, which presumably arouses increased dependency motivation. On the basis of these findings we would also predict that those parent attitudes which promote self-sufficiency (e.g., rewarding independence) would be related to lower susceptibility to distraction.

In addition to teachers' and peers' ratings, we devised a situational measure for assessing susceptibility to distraction. It was patterned on a similar measure used in the Maccoby-Rau study, and consisted in a comparison of our subjects' performance on three sets of tasks in a baseline (non-distraction) condition with their performance on equivalent tasks under distraction. The distracting stimulation used consisted of selections from a children's record (produced by Walt Disney) of the story of Pinocchio, played to the subjects through earphones while they were working on problems. This particular story was chosen since it was thought to be generally interesting and familiar to boys of this age, and since the content related to school and interpersonal problems and the hero is a boy. (We asked all of our subjects whether they were familiar with the story, and all but three of them reported that they were.)

We wished the tasks used to measure distraction to be as representative as possible of the kinds of proficiency generally measured in children of this age (and hence, of course, closely related to our measures of school achievement.) We therefore selected and adapted items from three subtests of the older form of the Primary Mental Abilities Test--verbal, spatial, and numerical. The verbal items involved finding the synonym for a test word from among four alternatives. The numerical items were one-digit addition and subtraction problems. The spatial items involved finding the missing part of a square from among a number of rotated alternatives. The words used in the verbal items were selected so as to be at second-grade reading level, and the other items were similarly chosen to be of an appropriate level of difficulty.

Tentative sets of items were pretested with the children in a second-third grade combination classroom (the only available second-graders not in our sample), so as to determine level of difficulty for each item and appropriate time limits for the administration of the tasks. Four equivalent sets of items were then made up, for each of the three types of tasks. This would make it possible to administer each type of task under the baseline and the distraction conditions on two occasions, so as to determine test-retest reliability. Twenty-seven verbal, 60 arithmetic, and 21 spatial items were included in each set. The four sets were administered to all subjects in a standard order.

Administration. The equipment used in administering the distraction measure consisted of a Wollensak monaural tape-recorder, the selections from "Pinocchio" transcribed on tape, several sets of earphones with a multiple jack which would permit connecting them simultaneously to the output of the recorder, a microphone, booklets containing the sets of items, pencils, and a stop watch. The procedure was administered to groups of our subjects varying in size from two to five.

The instructions and order of administration were as follows:

Baseline condition

Today we want to see how well you can keep your mind on your work when there is talking going on, for example if the TV were on or if people were talking in the same room.

First, we'll put these earphones on.

(EXAMINER PUTS EARPHONES ON EACH CHILD AND ADJUSTS, THEN PUTS EARPHONES ON SELF. FROM HERE ON IN TALKS THROUGH THE MICROPHONE INTO THE EARPHONES.)

Now here is what we are going to do. I am going to give you some word problems, some number problems, and some figure problems to work on. These are the same kinds of problems you have done before in your class at school.

At first we want to see how well you can do these problems when the room is quiet--when there is no talking going on. Later, we want to see how well you can do these problems when there is talking going on. The problems are inside these booklets.

(EACH CHILD GIVEN A BOOKLET)

Don't look inside until I tell you. First, put your name on the cover of the booklet. Your first name and then your last name or initial. Now turn to the first page of the booklet. This is a sample page. You see that the word on the left hand side of the line says "dog." Let's see if you can find a word that means the same as "dog." That's right. It's the word "pup." Put a circle around the word "pup." When I say begin, turn the page and there will be some more word problems for you to do. In each problem, circle the word that means the same as the word on the left hand side of the line. Work as quickly as you can without making mistakes. If you come to a problem which is too hard for you, skip it and go on to the next one. If you want to change an answer, make a cross through your wrong answer and circle the correct answer. There are a lot of problems here and you may not be able to finish them all. But go ahead and see how many you can finish. If you finish a page of problems before I tell you to stop, turn to the next page and continue working. Keep working until I tell you to stop. Are there any questions? O.K., begin.

(TIME: THREE MINUTES.) Stop. Turn to the colored sheet.

Now I'm going to give you some number problems. These are arithmetic problems. Some are addition problems and some are take aways. Turn the page and you will see a sample sheet. The first problem is 3 plus 3. What is the answer? That's right, it's 6. The next problem is 1 plus 2. What is the answer? That's right, it's 3. The next problem is a take away. It is 6 take away 4. What is the answer? That's right, it's 2. Work the next problem. What is the answer? That's right, 5 plus 4 is 9. Work the other sample problems on the page. When I say begin, turn the page and there will be some more number problems for you to do. Work as quickly as you can without making mistakes. If you come to a problem that is too hard for you, skip it and go on to the next one. Work all the way across one row and then go on to the next row. If you want to change an answer make a cross through the wrong answer and write the correct answer below it. There are a lot of problems here and you may not be able to finish them all. But go ahead and see how many you can finish. Are there any questions? O.K., begin.

(TIME: THREE MINUTES.) Stop. Turn to the colored sheet.

Now I'm going to give you some other kinds of problems. Turn the page and you will see a sample sheet. Look at the first figure in the row. It is part of a square. We are going to look at the other figures in the row to find the other part of the square. Which one of the figures is the rest of the square? That's right. It's the last figure in the row. Put a circle around the last figure in the row. If we slide the last figure around, it makes a square with the first figure. When I say begin, turn the page and there will be some more figure problems for you to do. Each time circle the figure that makes a square when it is put with the first figure in the row.

Work as quickly as you can without making mistakes. If you come to a problem that is too hard for you, skip it and go on to the next one. If you want to change an answer, make a cross through your wrong answer and circle the correct answer. There are a lot of problems here and you may not be able to finish them all. But go ahead and see how many you can finish. If you finish a page of problems before I tell you to stop, turn to the next page and continue working. Keep working until I tell you to stop. Are there any questions? O.K., begin.

(TIME: TWO MINUTES.) Stop. Turn to the colored sheet.

Distraction condition

At the beginning I told you we wanted to see how well you can keep your mind on your work while there is talking going on, for example if the TV were on or if people were talking in the same room. This time we will be doing the same kinds of problems as before. Only now while you are working on them you will be hearing talking and music over the earphones. Who knows the story of Pinocchio? Raise your hand if you do. If you know the story of Pinocchio, write "yes" on the colored sheet. This time while you are working on the problems, you will hear the story of Pinocchio over the earphones.

You remember that you did some word problems before. When you hear the tape recorder begin, turn the page and begin working.

(TIME: THREE MINUTES.) Stop. Turn to the colored sheet.

You remember that you did some number problems before. When you hear the tape recorder begin, turn the page and begin working.

(TIME: THREE MINUTES.) Stop. Turn to the colored sheet.

You remember that you did some figure problems before. When you hear the tape recorder begin, turn the page and begin working.

(TIME: TWO MINUTES.) Stop. Close your booklets.

The same procedure was used in the second administration, which usually followed the first by two weeks.

Scoring and reliability. Each set of items was scored for number of correct items completed within the time limit, and for number of errors. From this information, the following scores were derived for each of the three types of tasks:

1. Number correct in each of the two baseline conditions--a measure of proficiency at the task.
2. Difference in number correct between the baseline and the distraction condition, for each of the two administrations (Set 1 minus Set 2, Set 3 minus Set 4)--a measure of decrement in performance under distraction.
3. Increase in errors between baseline and distraction in each of the two administrations (Set 2 minus Set 1, Set 4 minus Set 3)--an alternate measure of the effects of distraction.

These two basic sets of distraction scores were then combined in various ways to yield the following composite measures. Since the variances of the sets of scores to be combined often differed, all combinations were done in terms of standard scores:

1. Difference correct, verbal (combining sessions)
2. Difference correct, number (combining sessions)
3. Difference correct, space (combining sessions)
4. Error increase, verbal (combining sessions)
5. Error increase, number (combining sessions)
6. Error increase, space (combining sessions)
7. Difference correct, Session 1 (combining tasks)
8. Difference correct, Session 2 (combining tasks)
9. Difference correct, grand total (combining tasks and sessions)
10. Error increase, Session 1 (combining tasks)
11. Error increase, Session 2 (combining tasks)
12. Error increase, grand total (combining tasks and sessions)

With respect to the reliability of these measures, the following questions arise: To what extent are individual differences in distraction (measured in terms of either decrement in correct performance or increase in errors) stable from one occasion to another (test-retest reliability)? To what extent is there generality in an individual's susceptibility to distraction over different kinds of material (across tasks)? Finally, to what extent are the two kinds of measures (decrement in correct performance and increase in errors) related to each other?

Table 3:15 shows test-retest reliabilities for the basic distraction scores on each of the three kinds of tasks and combining tasks.

Table 3:15. Distraction Scores, Reliabilities
Test-retest, Session 1 vs. Session 2

120 vs. 123	Difference correct (v)	.35
121 vs. 124	Difference correct (n)	.41
122 vs. 125	Difference correct (s)	.27
129 vs. 132	Error increase (v)	.23
130 vs. 133	Error increase (n)	.44
131 vs. 134	Error increase (s)	.11
147 vs. 148	Difference correct (combining tasks)	.45
150 vs. 151	Error increase (combining tasks)	.26

These reliability figures are generally quite low, particularly for the space task. The Difference Correct score seems to be somewhat more consistent than the Error Increase score. These figures immediately raise the question as to whether the low degree of consistency characterizes primarily the effects produced by distraction, or applies also to the performance on the baseline tasks themselves. Table 3:16 gives relevant information:

Table 3:16. Reliabilities of baseline measures (number correct) for the non-distraction portions; also r's with PMA subtests.

111 vs. 114	Verbal (Session 1 vs. Session 2)	.89
112 vs. 115	Math. (Session 1 vs. Session 2)	.74
113 vs. 116	Space (Session 1 vs. Session 2)	.46
111 vs. 38	Verbal (Session 1 vs. PMA)	.45
112 vs. 40	Math. (Session 1 vs. PMA)	.50
113 vs. 39	Space (Session 1 vs. PMA)	.34
114 vs. 38	Verbal (Session 2 vs. PMA)	.44
115 vs. 40	Math. (Session 2 vs. PMA)	.37
116 vs. 31	Space (Session 2 vs. PMA)	.47

It is clear that the low reliability of the distraction scores on the space task may be partly attributed to the low reliability of performance on the task itself. This is not the case, however, with respect to the verbal and number tasks. Hence we must conclude that there is quite low consistency in our subjects' responses to the distraction condition. This may be in part a function of the repetition of the distraction tasks, which was necessary in order to obtain reliability measure. This repetition introduce practice effects, which were substantial for some subjects, and seemed to lower the motivation of other subjects in the second session. One might argue, then, that the scores obtained in Session 1 are our most valid measures of the effects of distraction. However, since the correlations between Session 1 and Session 2 scores are in all cases positive, if low, we decided to use combined scores.

The second question raised above referred to the degree of generality across tasks in susceptibility to distraction. Table 3:17 provides the information relevent to this question.

Table 3:17. Generality across tasks-Correlations

120 vs. 121	Difference correct - Session 1 - Verbal vs. Math.	.20
120 vs. 122	Difference correct - Session 1 - Verbal vs. Space	.17
121 vs. 122	Difference correct - Session 1 - Math. vs. Space	-.01
123 vs. 124	Difference correct - Session 2 - Verbal vs. Math.	.09
123 vs. 125	Difference correct - Session 2 - Verbal vs. Space	.06
124 vs. 125	Difference correct - Session 2 - Math. vs. Space	.26
126 vs. 127	Difference correct - Combined - Verbal vs. Math.	.19
126 vs. 128	Difference correct - Combined - Verbal vs. Space	.15
127 vs. 128	Difference correct - Combined - Math. vs. Space	.16
129 vs. 130	Error increase - Session 1 - Verbal vs. Math.	.16
129 vs. 131	Error increase - Session 1 - Verbal vs. Space	-.03
130 vs. 131	Error increase - Session 1 - Math. vs. Space	.04
132 vs. 133	Error increase - Session 2 - Verbal vs. Math.	.10
132 vs. 134	Error increase - Session 2 - Verbal vs. Space	-.14
133 vs. 134	Error increase - Session 2 - Math. vs. Space	.18
135 vs. 136	Error increase - Combined - Verbal vs. Math.	.18
135 vs. 137	Error increase - Combined - Verbal vs. Space	-.22
136 vs. 137	Error increase - Combined - Math. vs. Space	.16

There is almost no generality across tasks. In fact some of the correlations involving the spatial task are negative. This suggests that the degree of susceptibility to distraction shown by a given individual may be a function, among other things, of the task used to measure it. These collreations are certainly very weak evidence of any general trait of susceptibility to distraction. However, since our original hypotheses called for the measurement of such a trait as an important aspect of impulse control, we decided to use the summary scores for both Difference Correct and Error Increase (variables 9 and 12 in the list above). The lack of generality across tasks suggests, however, that distraction scores based on the different tasks may well show differential relationships to the various achievement measures, and we will attempt to explore this possibility at a later time.

Table 3:18 shows the relationships between the two kinds of distraction scores.

Table 3:18. Relationship between difference correct and error increase

120 vs. 129	Verbal Session 1	(Difference correct vs. error increase)	.28
121 vs. 130	Math. Session 1	(Difference correct vs. error increase)	.05
122 vs. 131	Space Session 1	(Difference correct vs. error increase)	.52
123 vs. 132	Verbal Session 2	(Difference correct vs. error increase)	.18
124 vs. 133	Math. Session 2	(Difference correct vs. error increase)	.29
125 vs. 134	Space Session 2	(Difference correct vs. error increase)	.51
126 vs. 135	Verbal combined	(Difference correct vs. error increase)	.26
127 vs. 136	Math. combined	(Difference correct vs. error increase)	.14
128 vs. 137	Space combined	(Difference correct vs. error increase)	.57

They are only slightly related, except for the spatial task. The high relationships here are probably an artifact of the format of this task--a multiple-choice task with rather similar alternatives, so that errors were easy to make and automatically lowered the number correct.

(2) Avoidance of Failure. Previous studies of academic achievement, such as those by MacArthur (1955) and D'Heurle, Mellinger and Haggard (1959), have consistently found a factor of persistence to be correlated with academic success. An important question which arises in connection with these findings is: "Why, given two children of approximately equal mental capacity and an identical task, will one child spend a great deal of time working at it and the other child quit after a few attempts?" In short, what are the variables that influence persistence?

It has been suggested by the need-Achievement theorists, e.g., Feather (1962), that one factor affecting persistence at a given task is the person's fear or expectation that he might fail at it. Rather than face a task at which he might fail, a child may leave the field or give the problem little attention. Parental pressure for success at academic tasks, especially if accompanied by the threat of punishment or rejection if the child fails, is very likely to increase a child's fear of failure and perhaps his tendency to cope with the threat of failure by withdrawal or avoidance.

For these reasons, it seemed useful to develop a situational measure of the degree to which each of the subjects in this study exhibited the trait or behavioral tendency of avoidance of failure. The expectation was that scores on such a measure would be correlated with measures of persistence and would reflect differential parental pressures for achievement.

Crandall and Rabson (1960) developed a measure of failure-avoidance which is an adaptation of the method originally used by Rosenzweig to investigate the Zeigarnik effect. They presented children with two wooden puzzles, timed their performance, and allowed them to succeed on one but not the other. They then categorized as "failure-avoidant" those subjects who chose to continue working on the puzzle at which they had succeeded rather than the one at which they had failed, when given a choice. Age and sex differences were found in patterns of response.

The measure of failure-avoidance used in the present study used a set of paper-and-pencil mazes developed by Porteus (1933). Ten of the Porteus mazes were pre-tested with a group of second-grade children (not part of our sample) in order to match pairs of mazes with respect to degree of difficulty.

Four pairs of mazes were selected in this way. It was thus possible to present eight mazes to subjects, inducing failure for the child's efforts on half of them and success for the other half. Data could then be collected on the child's four choices between previously completed and failed tasks, where the two mazes offered in each choice did not differ in difficulty.

The failure-avoidance measure was administered to the subjects individually. When the child was seated, these instructions were given:

> Today I am going to give you some mazes to do. Have you ever done a maze before? Well, here is how they work. See the mouse--he wants to go to the cheese there, but he must get there without getting stuck and without crossing any lines. Now, I'm going to give you nine of these mazes to do, but I'm going to time you on them. If the time is up before you are done, you'll have to stop. Do you understand? All right, trace a line from there to here. If you make a mistake, start over again. Go ahead.

With each successive maze, the child was told, "Now try this one. Begin there and find your way to here. Go ahead." The stopwatch was in evidence for the child at all times.

In a predetermined order that was the same for all subjects, the child was made to experience failure on one maze in each matched pair, but was allowed to complete the other maze successfully. Thus when the first part of the session was completed, each child had failed on four mazes and succeeded on the other four. At this point, the child was told:

> It looks like we have some time left over. I wonder if you would do about half of these mazes over again from the first. Here is a red pencil, so that you won't get the lines mixed up, and I'll let you choose which ones you want to do over again. Would you like to do this one or this one?

The child was then shown the first pair of mazes, one of which he had passed and one he had failed. His choice was recorded, and he was asked to make similar choices between the failed and completed task for the other three pairs of mazes. Each child was given a score from zero to four, representing the number of previously passed mazes that he chose to do over again.

Scores were obtained for 101 of the boys in our sample; the other three were absent at the time of testing. The distribution of scores was as follows:

0 Failure-Avoidance choices	40
1 Failure-Avoidance choices	19
2 Failure-Avoidance choices	19
3 Failure-Avoidance choices	20
4 Failure-Avoidance choices	8

The mean number of failure-avoidant choices was 1.386 and the standard deviation was 1.371.

No measure of reliability was obtained. However, one of the rating scales filled out by the second-grade teachers was intended to measure the same trait. (See description of Teacher Ratings.) The correlation between the experimental measure of Avoidance of failure and the relevant teacher rating scale is .026. The badly skewed distributions of both variables sheds doubt on the meaningfulness of a Pearson r, but an inspection of the scatter-plot also reveals no relationship. If the teachers' ratings are in fact measuring the same construct we had in mind when we designed the experimental measure, this is certainly negative evidence of reliability.

Some other data on the validity, and therefore the presumed reliability, of the avoidance-of-failure measure are available, however. Mary Rothbart, who designed the measure, proceeded to select two groups of 20 subjects each, representing the extremes of the distribution--high vs. low avoidance-of-failure. She predicted that failure-avoidant boys would show less persistence than non-failure-avoidant boys in working on a difficult task (embedded figures), and furthermore that failure-avoidant subjects would show a greater decrement of persistence under instructions involving high pressure to succeed. These predictions were sustained--the differences between the two extreme groups were significant at less than the .05 level. These findings suggest that the experimental measure of failure-avoidance does in fact tap the construct it was designed to measure, and that this dimension of behavior does relate to persistence and to achievement-pressure in the predicted directions. Further data on avoidance-of-failure are reserved to a later section, where they will be discussed in relation to the main findings of the project.

(3) Delay of Gratification. The psychoanalytic account of the development of ego functions, and of impulse control in particular, stresses the importance of the capacity to delay immediate drive-discharge or impulse-gratification. The more mature individual is assumed to be more capable of postponing the immediate pursuit of pleasure, or overt behavioral expression of a need or impulse, in favor of a less immediate reward or goal. Thus a measure of the capacity or tendency to postpone immediate gratification in favor of a more desirable but more distant goal should prove useful in the assessment of impulse control and the relative maturity of ego functions in general. Our general predictions would be that delay of gratification should be positively related to other measures of impulse-control, also to self-sufficiency, and that academically more successful boys would probably show more tendency to prefer delayed rewards.

A measure of preference for delayed gratification has been developed and used in a number of studies by Mischel (1962). For use in this project we modified very slightly a version of Mischel's measure which he had developed for group administration to fifth-grade children. The modifications consisted of the use of primary type in the answer booklets and some simplification of the instructions. This version was pre-tested with a second-grade class and found satisfactory.

The measure consisted of fourteen choices. In each case, the subjects were given the choice between a small item now or a more valuable one later. Items selected for the measure were those on which approximately 50 per cent of the pretest subjects preferred the delayed alternative and 50 per cent preferred the immediate alternative. The choices offered to the subjects are listed below:

Bag of small marbles and bag of large marbles in three weeks
Bag of small marbles today

25¢ today
35¢ in one week

Large magnifying glass in three weeks
Small magnifying glass today

95¢ in two weeks
80¢ today

One Hershey bar today
Two Hershey bars in two weeks

50¢ today
80¢ in three weeks

Three volumes of "Peanuts" in three weeks
Two volumes of "Peanuts" today

65¢ in three weeks
35¢ today

Small eraser today
Large eraser in one week

50¢ today
75¢ in two weeks

Small rubber ball today
Large rubber ball in two weeks

80¢ in four weeks
45¢ today

Small notebook today
Large notebook in two weeks

25¢ today
40¢ in two weeks

Administration

The delay of gratification measure was administered to our subjects in small groups immediately following the completion of the second round of distractibility tests. The composition of the group was therefore identical to that for the second distractibility session. After each subject had been given a booklet the following was read verbatim:

> The reason that I'm here today is that I am interested in finding out how different children choose when they are offered different kinds of choices and when each of these choices is between two things, both of which they want.
>
> I will be asking you to make some choices; the choices will be between two things,both of which you want, but if you choose one you can't have the other.... Answer each question to show what you would really take...this is not a test, there are no right or wrong answers...just make a check in the space next to what you would really do.
>
> For example, the choice might be:
>
> .50¢ now
> $1.00 next week
>
> If you took the .50¢ now you could not have the $1.00 next week, and if you wait for the $1.00 next week you could not have the .50¢ now. Put an X in front of the one you would really choose.
>
> We are not interested in which thing in each pair you think is better; all we want you to do is to decide in each

> pair which one thing you would take, remembering that you have to wait for one of the things but can get the other right away.
>
> I will offer you 14 choices. Choose whether you want the smaller one now or the more valuable one later. Choose very carefully, because in one of the choices you will really get what you choose; so if you picked the smaller one now that's what you'll get and if you chose the more valuable one later that's what you'll get. You won't know which one of your 14 choices you'll actually get until the very end, so choose very carefully each time.
>
> Wait for me to show you each pair of things before you make your choice and do not turn the page until I give you the signal.

The item on which the subjects were actually given their choice was that of the magnifying glasses. Those who chose the small magnifying glass were given their choice as soon as the booklets had been collected and the experimenter had determined the choice of each subject. For those who chose the large magnifying glass, the appropriate number of large magnifying glasses were left with the teacher or school secretary with instructions to give them to the boys in three weeks time. For those subjects who chose the large magnifying glass and who were tested during the last two and one-half weeks of school, the large magnifying glasses were mailed to their home three weeks after the date of the test.

Scoring and Reliability

For each of the 14 choices where the subject indicated a delayed preference a score of one was given; a score of zero was given for each choice where the subject preferred the immediate alternative. Thus, a subject who delayed on all choices received a score of 14 and one who chose the immediate alternative on all choices received a score of zero.

To determine reliability of the measure, the correlation between money and non-money items was determined, as well as split half and odd-even reliabilities. The correlation between money and non-money items was .70 (.82, corrected by Spearman-Brown); and split-half reliability was .77 (corrected by Spearman-Brown formula) and the odd-even reliability for non-money items was .75 (corrected) and for money items was .90 (corrected).

Construct Validity

Our prediction that the delay of gratification score would relate to other measures of impulse control and self-sufficiency was not sustained. The correlations of delay of gratification with measures of impulse control (teacher-ratings, peer-ratings, Parent's reports) are all very close to zero. The correlations with the measures of self-sufficiency are also low, but consistently *negative*, and some of them approach significance. This may simply be another illustration of the non-correspondence of ratings of behavior with a somewhat projective measure, although the choices involved in the delay of gratification test are presented to the child quite concretely. Another possible interpretation is that the child who chooses the delay alternative is motivated to preserve a relationship with an adult who is perceived as nurturant. (This latter interpretation would agree with the findings of a previous study, Maccoby and Rau, 1963, in which the children who delayed tended also to be somewhat more dependent.) In any case, it is doubtful that we can consider this test a measure of impulse-control, and it has not been included among the variables in that area.

3. Measures of Parent Attitudes and Characteristics

The main focus of this study is the relationship of achievement and achievement-related aspects of personality to parent attitude antecedents. In order to measure the relevant dimensions of parent attitudes (rejection, restrictiveness, positive demands for self-sufficiency, and other related variables) we used primarily a selection of scales from the Stanford Parent Questionnaire, developed by Winder and Rau (1962). The original version of this questionnaire contained about 500 items, grouped on an a priori basis into 27 scales for mothers and 28 scales for fathers. (Mothers' and fathers' forms contained, with a few exceptions, the same items.) These scales covered a number of areas of child-rearing attitudes, parent-child relations and parental adjustment found in previous studies to relate to differences among children in the development of normal and deviant personality characteristics. Of particular interest were relationships to aspects of interpersonal behavior which could be rated by teachers and peers. The items which comprised the various scales were culled from verbatim transcriptions or recordings of interviews with parents, and where possible, the original wording was preserved.

The items are presented to parents as a series of statements which have been made by other parents about their families. (Items from different scales are interspersed in a random order.) The parent taking the questionnaire is asked to indicate his reaction to each item by checking one of four alternatives: Strongly Agree, Agree, Disagree, Strongly Disagree. The responses may be scored in a dichotomous fashion (1 or 0), or by assigning scores from 1 to 4 to the different alternatives, depending on the scored direction. The parent's score on a scale is then the sum (or mean) of his responses to the items comprising the scale.

Following the original administration of the SPQ to a sample of 118 mothers and 108 fathers of fourth, fifth and sixth-grade boys (see Winder and Rau, 1962), empirical item-analyses were performed to select those items internally consistent with the scale to which they had been rationally assigned. The general criterion for the retention of an item was a correlation of .30 with total scale score. (Such a correlation would be significant at less than the .0001 level.)

Not all of the SPQ scales were relevant to the hypotheses of this study. At two different points in the project, a selection of the scales was administered to the mothers and fathers of our subjects. On each occasion, the parents had been informed ahead of time that they would be asked to fill out such a questionnaire, and the scales were sent to them by mail, with return envelopes. Parents who did not return questionnaires by the date requested were contacted again, first by postcard and then by phone, so as to ensure returns from as large and as representative a proportion of the sample as possible.

a. The Stanford Parent Questionnaire--Kindergarten, First Grade Administration:

At an earlier phase of the project, two of the investigators, Mlodnosky and Anastasiow, were interested primarily in those child-rearing attitudes which would be related to the development of sex-typing and of self-sufficiency, as these in turn would affect differential readiness for academic work in first grade. Complete reports of their studies are available in two doctoral dissertations: Mlodnosky (1962) and Anastasiow (1963). They selected the following twelve scales from the SPQ, including only those items which met the criterion of internal consistency described above:

- Contingent Reward
- Rejection (Low Warmth)
- Sex Anxiety
- Restrictiveness
- Self-esteem
- Use of Models
- Resemblance to Parents
- Democracy
- Rewarding Independence
- Achievement Standards
- Reasoning
- Closeness to Father (administered to fathers only)

Copies of this version of the questionnaire were mailed by Mlodnosky to the families of a large number of kindergarten boys in May of 1961. The responses of the 130 mothers who returned the questionnaire were analyzed by Mlodnosky as part of her study (see Chapter II). The responses of the fathers contacted as part of the Mlodnosky study whose boys remain in our current sample were later also scored and added to our data on kindergarten--first-grade parent attitudes.

Questionnaires were mailed to the parents of an additional 98 boys in September of 1961 by Anastasiow, and the responses of the 78 mothers and 72 fathers in this group who returned them were analyzed by him. Of this combined group of parents, 92 mothers and 61 fathers are among the parents of our current sample. It is their responses to the scales from the SPQ listed above which constitute our data on the parent attitudes hypothesized as antecedents to differences in achievement and related personality characteristics as measured in second grade.

Table 3:19, reproduced from Anastasiow (1963), gives the names and standard deviations of the scores on the SPQ scales obtained by his sample of mothers and fathers, as well as reliabilities (Kuder-Richardson) for his sample and for Mlodnosky's sample of mothers (the latter being split-half reliabilities, corrected for attenuation by the Spearman-Brown formula). Except for one scale for mothers (Resemblance to Parents), the two sets of reliabilities are very comparable and quite satisfactory.

In considering the dimensions of child-rearing attitudes related to the achievement and other behavior of the boys in our sample, it seems relevant at this point to explore the structure of attitudes revealed by the parents' responses to this set of scales. Our original hypotheses were stated in terms of variables represented primarily by single scalres of the questionnaire, but an examination of the intercorrelations of the SPQ scales reveals that a number of them are quite highly intercorrelated. We would naturally expect that attitudes which are intercorrelated would relate in the same way to child behaviors. Furthermore, it may be that the dimensions of attitudes we originally had in mind are better represented by clusters of scales than by single variables.

Principal Axis Factor Analyses, rotated to Varimax (Kaiser, 1958) solution for the three latent roots greater than one, were performed on the intercorrelation matrices of the mother and father scales.

Table 3:19 REVISED EDITION OF STANFORD PARENT QUESTIONNAIRE (MLODNOSKY-ANASTASIOW)[a] MEANS, STANDARD DEVIATIONS, RELIABILITIES, STANDARD ERRORS

Scale	No.	Means		SD		SEM		Split-Half[b]		KR-20	
	Items	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers
1 Contingent Reward	6	20.01	21.19	2.76	2.35	1.31	1.16		.6751	.7720	.7344
2 Low Warmth	18	35.04	34.49	6.49	5.83	3.00	2.91		.8189	.7853	.8189
3 Sex Anxiety	14	33.11	33.64	5.53	6.65	3.10	3.89		.8333	.6850	.8101
4 Restrictiveness	11	31.36	32.07	4.00	4.40	2.41	2.38		.6975	.6355	.7068
5 Self-Esteem	12	31.25	32.92	5.20	4.18	2.70	2.55		.7381	.7294	.6270
6 Use of Models	8	14.94	16.09	3.27	3.79	1.97	2.03		.5801	.6386	.7132
7 Resemblance to Parents	6	14.76	14.63	2.89	2.17	2.00	1.85		.5150	.5215	.2717
8 Democracy	8	25.04	26.12	3.43	3.01	2.01	1.93		.5923	.6548	.5897
9 Rewarding Independence	12	38.23	38.98	4.42	4.10	2.37	2.15		.6669	.7122	.7245
10 Achievement Standards	9	29.43	29.89	3.37	2.94	1.97	1.64		.6498	.6591	.6868
11 Reasoning	13	38.68	40.54	5.01	4.38	2.37	2.35		.6453	.7703	.7225
12 Closeness to Father[c]	8	25.06		3.76		2.13				.6784	

[a] Mlodnosky's sample n = 130 (Mothers); Anastasiow n = 78 (Mothers), 72 (Fathers).

[b] Based on Mlodnosky's data, Mothers only, corrected for attenuation by Spearman-Brown formula for whole test.

[c] Administered to Fathers only.

Such a factor analysis was performed by Anastasiow on the sample of mother and father questionnaires collected by him. The analysis was subsequently repeated on the responses to the kindergarten--first-grade questionnaires of the mothers and fathers of the children remaining in our second-grade sample. Since it is in fact this sample of parents with which we are concerned in our further data analyses, we shall report the results of this second factor analysis. The method and findings differ in minor ways from those reported by Anastasiow (1963). In this analysis, the Kiel-Wrigley criterion was used for stopping rotation; i.e., each factor included in the solution must have at least three variables which reach their highest loadings on that factor. The results of these factor analyses are presented in Tables 3:20 and 3:21.

The Varimax solution yields three factors for mothers and four for fathers, suggesting (as the analysis of our second-grade data will confirm) that the structure of attitudes may be somewhat more complex for fathers than for mothers. The first factor which emerges is very similar for mothers and fathers. It involves Contingent Reward, Democracy, Rewarding Independence, and Reasoning for both parents, and Achievement Standards for mothers and Restrictiveness for fathers. (Restrictiveness also loads .3312 on this factor for mothers.) In this context, the Restrictiveness variable seems to represent a sesne of the importance of knowing the child's whereabouts, within reasonable limits. Anastasiow has suggested that the difference in loadings between mothers and fathers may represent the fact that it is mothers who really have to put restrictions into operation, and thus may temper them somewhat in the light of their

Table 3:20. Rotated Factor Matrix - Varimax Solution
Mother Attitude Scales - Kindergarten Data

Scales	Communality	Loadings*		
		Factor 1	Factor 2	Factor 3
1. Contingent Reward	.6858	.8077	----	----
2. Rejection	.7682	----	-.8525	----
3. Sex-Anxiety	.4650	----	----	.6718
4. Restrictiveness	.5693	----	----	.6716
5. Self-esteem	.7750	----	.8470	----
6. Use of Models	.1045	----	----	----
7. Resemblance to Parent	.2406	----	----	----
8. Democracy	.4772	.6746	----	----
9. Rewarding Independence	.5146	.7035	----	----
10. Achievement Standards	.7154	.6867	----	.4522
11. Reasoning	.4758	.6524	----	----

*Only loadings of .40 or more are listed.

Table 3:21. Rotated Factor Matrix - Varimax Solution
Father Attitudes - Kindergarten Data

Scales	Communality	Loadings* Factor 1	Factor 2	Factor 3	Factor 4
1. Contingent Reward	.8418	.8976	----	----	----
2. Rejection	.7787	----	----	.8606	----
3. Sex-Anxiety	.7626	----	----	----	.7519
4. Restrictiveness	.6524	.6784	----	----	----
5. Self-esteem	.5434	----	----	-.6571	----
6. Use of Models	.7367	----	----	----	.7856
7. Resemblance to Parent	.4163	----	----	----	.4439
8. Democracy	.7066	.7134	----	----	----
9. Rewarding Independence	.8588	.7266	-.5485	----	----
10. Achievement Standards	.8931	----	.9252	----	----
11. Reasoning	.8640	.7791	-.5057	----	----
12. Closeness to Father	.9034	----	.9154	----	----

*Only loadings of .40 or more are listed.

knowledge of what is realistic. This first factor may be seen as representing generally positive, and desirable in our cuoture, attitudes about child-training, or it may be seen as representing more specifically the area of positive demands for maturity and self-sufficiency. In the latter case (and this is the interpretation we favor), it would be equivalent in a more general way to the third of the dimensions of parent attitudes specified in our hypotheses, combining reasoning with positive demands for self-sufficiency. It should be noted that the Achievement Standards scale loads on this factor as well as on the third factor for mothers, but not for fathers.

Factor Two for mothers and Factor Three for fathers are identical, involving the two variables of Rejection and Self-esteem loaded highly in opposite directions. Apparently attitudes towards the self and affectional attitudes towards the child are very closely related, a finding which would be no surprise to most personality theorists. Thus the definition of the rejection dimension may be broadened to include derogation of self as well as of the child. It is perhaps worth noting that the connection between these two scales does not seem to be quite as close for fathers as for mothers.

Factor Three for mothers involves Sex-Anxiety, Restrictiveness, and to a lesser extent, Achievement Standards. This factor may be seen as representing the restrictiveness dimension for mothers. As noted above, Achievement Standards, as expressed by mothers, seem to involve a mixture of positive demands for maturity and of restrictiveness, or demands for conformity. A restrictiveness factor as such does not appear for fathers.

Factor Four for fathers overlaps the restrictiveness factor (Factor Three) for mothers by only one scale: Sex-Anxiety. The other two scales with high loadings on this factor for fathers are Use of Models and Resemblance to Parent, which do not load significantly on any factor for mothers. The significance of this factor for fathers would appear to be that it represents the desire that the son refrain from unacceptable manifestations of sexuality and conform to a proper masculine model, as represented in part by the father himself.

Factor Two for fathers involves very high loadings for Achievement Standards and Closeness to Father, and moderate loadings in the opposite direction for Rewarding Independence and Reasoning. No similar factor appears for mothers. One might infer that fathers of kindergarten boys who demand achievement feel close to their sons, perhaps see them as extensions of themselves, and are involved with them in a fashion which does not encourage self-sufficiency. Such fathers tend not to use verbal reasoning as a means of controlling their sons' behavior; perhaps for fathers of boys this age, reasoning represents a more distant, intellectualized approach. We might label this factor the "paternal involvement" dimension.

A final question which arises in relation to the measures of mothers' and fathers' attitudes is that of the degree of agreement between the parents of a given child. The correlations between mother and father attitudes for the 61 cases from the kindergarten--first-grade sample of parents remaining in our present sample will be reported below, in Table 3:22, along with the equivalent information for the second-grade sample.

Table 3:22. Mother and Father Attitudes, Second-Grade Sample: Means, Standard Deviations and Reliabilities

	Mothers				Fathers			
Scale	No.of Items	Mean	St.Dev.	Relia.*	No.of Items	Mean	St.Dev.	Relia.*
Contingent Reward	6	20.68	42.5	.7745	5	17.00	35.6	.6644
Rejection	20	39.58	35.2	.7926	16	31.56	30.7	.7084
Sex Anxiety	13	30.73	48.3	.8371	14	32.98	42.5	.8275
Restrictiveness	11	30.42	36.7	.7432	10	27.29	31.7	.6327
Demands for Aggres.	21	56.89	37.2	.8560	19	54.70	35.7	.8713
Punitiveness and p.p.	9	21.47	42.7	.6834	9	23.81	39.3	.6489
Parental Aggression	12	28.50	29.4	.5534	10	22.90	34.6	.5804
Self-esteem	13	35.31	38.6	.7260	17	45.85	32.4	.7577
Positive Fa.-Mo. Relationship	23	71.76	45.3	.9094	25	74.08	32.4	.8427
Use of Models	8	15.57	33.8	.5353	8	15.69	45.2	.7434
Sex-role Expect.	13	30.55	35.1	.7285	11	28.96	32.2	.6328
Resemblance to Parent	4	9.53	46.1	.5052	7	17.59	33.0	.5009
Closeness to Father	--	-----	-----	-----	7	19.38	35.2	.6689
Democracy	10	32.17	34.7	.7066	12	37.80	32.0	.7451
Rewarding Independ.	12	39.43	29.8	.6981	12	37.43	28.2	.6754
Child's Mastery	7	20.97	30.6	.3052	12	34.31	23.3	.3140
Achievement Stand.	11	33.34	30.7	.6198	11	34.07	24.5	.4861
Reasoning	12	37.69	34.7	.7445	12	36.53	33.0	.7766

*Computed by means of Kuder-Richardson formula 20.

b. The Stanford Parent Questionnaire--Second Grade Administration

A somewhat expanded selection of scales from the SPQ was administered to the parents of our subjects during the second-grade phase of the project. The added scales involved attitudes towards aggression and punishment, sex-role expectations, and a measure of the degree of positive attitudes expressed by each parent towards the other. Although we did not originally have hypotheses about these specific attitudes, the findings of the Mlodnosky and Anastasiow studies suggested that they might add useful information. We also added an SPQ scale designed to measure the parent's view of the Child's Mastery. The selection of items to be included in this version of the scales was based on a slightly revised item analysis (carried out by Winder), although the same criterion for item inclusion was used and the group of items included in each scale are substantially the same. A copy of this version of the SPQ, along with the listing of the scales to which the items belong and the direction of scoring, is included in Appendix D . The instructions given to parents for filling out the questionnaire are also included.

Copies of this form of the mother and father questionnaires, along with several other instruments described below, were mailed to all of the parents of our sample of 104 second-grade boys in May of 1963. After the follow-up contacts described above, 80 mothers and 67 fathers returned completed copies. This then constitutes our sample of parent attitudes measured at second-grade level. The numbers of items included in each scale, the scale means, standard deviations and reliabilities are given in Table 3.22. Except for the Child's Mastery scale, which we had planned to consider as a consequent measure, the reliabilities for these scales seem quite satisfactory, particularly since the Kuder-Richardson formula yields a lower bound estimate of reliability.

Another kind of question about the reliability of these scales, on which our data give us some information, is that of consistency over time. In our sample of parents there are 74 mothers and 46 fathers from whom we obtained responses to the SPQ scales both at the end of their sons' kindergarten year (or the beginning of their first-grade year) and at the end of the second-grade--a time span of 20 to 24 months. We have test-retest correlations, of course, only for those scales which were included in both administrations--11 scales for mothers and 12 for fathers. These data are presented in Table 3.23. All of the mother scales except Democracy have test-retest correlations significant at the .01 level or better, and Democracy is significant at the .05 level. For fathers all scales are significant at the .01 level except Closeness to Father (significant at the .02 level) and Rewarding Independence and Achievement Standards which are close to 0. In general the scales in the "positive demands for self-sufficiency" cluster show less consistency over time, particularly for fathers, than do the other groups of scales. Sex-anxiety is the most consistent scale for both parents. This difference in consistency among the dimensions of parent attitudes does not seem to be a function of any lower reliabilities at a given time for a particular group of scales. Thus we may conclude that there is in fact less stability over the particular developmental period covered by our study of parental attitudes and expectations in the area of self-sufficiency and achievement than in other areas.

Table 3:23. Parent Questionnaire Scales - Test-Retest Correlations (Kindergarten with Second-Grade)

	Mothers			Fathers		
	Var. No.			Var. No.		
Scale	K	2	r (N = 74)	K	2	r (N = 46)
Contingent Reward	61	231	.46**	72	190	.39**
Rejection	62	232	.63**	73	191	.50**
Sex Anxiety	63	233	.74**	74	192	.68**
Restrictiveness	64	234	.49**	75	193	.64**
Demands for Aggres.	--	235	--	--	194	--
Punitiveness and p.p.	--	236	--	--	195	--
Parental Aggression	--	237	--	--	196	--
Self-esteem	65	238	.67**	76	197	.51**
Positive Fa.-Mo. Relationship	--	239	--	--	198	--
Use of Models	66	240	.40**	77	199	.53**
Sex-role expect.	--	241	--	--	200	--
Resemblance to Parent	67	242	.40**	78	201	.54**
Closeness to Father	---	---	--	83	202	.34*
Democracy	68	243	.24*	79	203	.38**
Rewarding Independ.	69	244	.59**	80	204	.16
Child's Mastery	--	245	---	--	205	--
Achievement stands.	70	246	.55*	81	206	.04
Reasoning	71	247	.50**	82	207	.39**

* Significant at less than .05 level.
** Significant at <.01 level.

This may reflect the fact that during the early years of a child's school experience there are marked developmental changes in children's competencies, and at least in relation to school achievement and adjustment parents get a great deal of feed-back about their child's development in relation to others. This may mean that parents, and especially fathers who may not have quite as good a picture as mothers in the beginning of their child's competencies, readjust their attitudes and expectancies in line with this feed-back. We plan to explore further the possibility that a child's actual level of achievement and maturity may influence shifts in parent attitudes over time.

We wished to see to what extent the structure of parent attitudes, as measured by the second-grade administration of the SPQ, resembled that which emerged in the kindergarten--first-grade data. Accordingly we repeated the factor analysis on the intercorrelations of the second-grade mother and father attitude scales. Again the original Principal Axis analyses were rotated to a Varimax solution, using the Kiel-Wrigley criterion for stopping rotation. This time the final solution yielded four factors for mothers and six for fathers. It must be borne in mind that a greater number and variety of scales was administered at second-grade, thus the changes in structure may be a function of the number of scales included, the age of the children, or both. The results of this factor analysis, for the mother and the father scales, are presented in Tables 3:24 and 3:25.

The factorial solution which emerges for the mother variables is very similar to that found in the earlier data. The first factor again

Table 3:24. Rotated Factor Matrix - Varimax Solution
Mother Attitude Scales - Second-Grade Data

		Loadings*			
Scales	Communality	Factor 1	Factor 2	Factor 3	Factor 4
Contingent Reward	.6234	.7440	----	----	----
Rejection	.6444	----	.7326	----	----
Sex Anxiety	.6301	----	----	.7575	----
Restrictiveness	.5177	----	----	.6603	----
Demands for Aggress.	.4917	.5172	----	.4225	----
Punitiveness and p.p.	.5401	----	----	.6516	----
Parental Aggression	.5928	----	-.7453	----	----
Self-esteem	.6976	----	.8182	----	----
Positive Fa.-Mo. Relationship	.5845	----	.6766	----	----
Use of Models	.3101	----	----	----	-.4805
Sex-role expect.	.2272	----	----	----	----
Resemblance to Parent	.4041	.5020	----	----	----
Democracy	.5585	.7464	----	----	----
Rewarding Independ.	.6051	.7526	----	----	----
Child's Mastery	.4075	.5497	----	----	----
Achievement Stand.	.5557	.5126	----	.4963	----
Reasoning	.6098	.6383	----	.4037	----

* Only loadings of .40 or more listed.

Table 3:25. Rotated Factor Matrix - Varimax Solution
Father Attitude Scales - Second-Grade Data

		Loadings					
Scales	Commun-ality	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Contingent Reward	.5801	.7041	----	----	----	----	----
Rejection	.6526	----	----	----	-.7488	----	----
Sex Anxiety	.6106	----	----	.7143	----	----	----
Restrictiveness	.5008	----	----	.5073	-.4666	----	----
Demands for Aggres.	.4110	----	----	----	----	-.5718	----
Punitiveness and p.p.	.4500	----	----	----	----	-.5848	----
Parental Aggression	.4563	----	-.5814	----	----	----	----
Self-esteem	.6738	----	----	----	.7609	----	----
Positive Fa.-Mo. Relationship	.3620	----	.5675	----	----	----	----
Use of Models	.2827	----	----	----	----	----	.4585
Sex-role expect.	.4317	----	----	.6194	----	----	----
Resemblance to Parent	.3485	----	----	----	----	----	----
Closeness to Father	.3740	----	----	----	----	----	-.5060
Democracy	.6724	.7461	----	----	----	----	----
Rewarding Independ.	.6923	.6250	----	----	----	----	----
Child's Mastery	.4900	.6472	----	----	----	----	----
Achievement Stand.	.5842	----	----	----	----	-.6385	----
Reasoning	.7033	.6951	----	----	----	----	----

seems to represent *positive demands for self-sufficiency*, and includes high loadings on Contingent Reward, Democracy, Rewarding Independence, and Reasoning, and moderately high loadings on Demands for Aggression, Resemblance to Parent, and Achievement Standards. The second factor for mothers is the Rejection--Low Self-esteem dimension, which this time includes Positive Mother-Father Relationship in the same direction as Self-esteem and Parental Aggression in the same direction as Rejection. We see that for mothers the cluster of positive attitudes towards self and child also involves very intimately the mother's feeling about the father. The third factor is the Sex-Anxiety and Restrictiveness dimension, which this time includes the Punitiveness variable and also involves lower loadings for Achievement Standards, Demands for Aggression and (curiously enough) Reasoning. In the second-grade mother data, Achievement Standards and Demands for Aggression are very closely related (r = .55) and seem to load about equally on the *positive demands for self-sufficiency* and the *restrictiveness* dimensions. Thus for mothers high scores on this pair of variables may carry either or both of these implications. The fourth factor for mothers is not a very significant one, involving only one variable, Use of Models, with a loading over .40.

For fathers, the addition of further scales to this version of the questionnaire seems to have led to a somewhat more differentiated structure of attitudes. Factor one, for fathers as for mothers, is again the *positive demands for self-sufficiency* dimension, including the Contingent Reward, Democracy, Rewarding Independence, Child's Mastery, and Reasoning. The variables of Demands for Aggression and Achievement Standards are more clearly differentiated from this dimension for fathers, and appear with high loadings only on Factor Five, along with the Punitiveness scale. The meaning of the Achievement Standards scale for fathers seems to have shifted considerably from the kindergarten analyses. Factor Two for fathers is a specific "parental hostility" dimension, including moderately high loadings for Positive Mother-Father Relationship and for Parental Aggression, in the opposite direction. For fathers this dimension seems to be separate from the Rejection--Low Self-esteem dimension, which appears as Factor Four, with a moderate loading on Restrictiveness in the same direction as Rejection. Apparently for fathers affectional attitudes or evaluation of self and son, although closely related to each other, are relatively independent of feelings towards spouse. Factor Three for fathers is now the Sex-Anxiety and Restrictiveness dimension, with Sex-Role Expectations loading fairly high in this factor. Apparently the meaning of the Restrictiveness scale has changed considerably for the parents of second-grade boys--it no longer loads significantly on the positive demands for self-sufficiency factor, as it did at kindergarten, and now seems to carry for fathers the implication of the suppression of unacceptable manifestations of sexuality, especially those which would not be consonant with the cultural stereotype of masculinity. The last factor for fathers, as for mothers, involves the Use of Models scale, with Closeness to Father loading in the opposite direction. As we have indicated before, the Use of Models scale seems to imply parental criticism of the child's behavior and, for fathers, not feeling close to their sons--perhaps the implication is

"Why can't you be more like me?"

Having explored the structure of the attitudes expressed by mothers and fathers at the two different age levels involved in our study, and the consistency of these attitudes over time, the final issue on which we would like to present some data at this point is that of agreement between mothers and fathers in their attitudes toward a given child. As is clear from the figures cited above, fewer fathers than mothers responded to the questionnaires, but we did obtain responses (at kindergarten level) from 61 pairs of parents of boys who still remain in our sample and from 66 pairs of parents of second-grade boys. The correlations between mothers' and fathers' scores on each of the attitude scales, obtained from these two samples where we have the scores of both parents of each child available, are shown in Table 3:26. Although all of the correlations for parents of kindergarten boys are positive, most of them are quite low, and the correlation for only one scale, Sex-Anxiety, is significant at the .10 level. Using a somewhat different but overlapping sample of first-grade mothers and fathers, Anastasiow obtained a similar set of correlations. He found further that degree of parental agreement in attitudes seemed significantly related to differences in the son's appropriacty of sex-typing and level of achievement. We plan to explore this possibility further in our second-grade data.

Table 3:26

Correlations between Mothers' and Fathers' Scores
on the SPQ Scores

Scales	Kindergarten	N = 61	2nd Grade	N = 66
Contingent Reward	61-72	.15	231-190	.11
Rejection	62-73	.18	232-191	.27*
Sex Anxiety	63-74	.45**	233-192	.67**
*Restrictiveness	64-75	.17	234-193	.41**
Demands for Aggression	---	---	235-194	.46**
Punitiveness	---	---	236-195	.32**
Parental Aggression	---	---	237-196	.10
Self-esteem	65-76	.28*	238-197	.21
Positive Fa.-Mo. Relationship	---	---	239-198	.37**
Use of Models	66-67	.21	240-199	.24*
Sex Role Expect.	---	---	242-200	.47**
Resemblance to Parent	67-78	.18	242-201	-.04
Democracy	68-79	.23	243-203	.09
Rewarding Independence	69-80	.20	244-204	.22
Child's Mastery	---	---	245-205	-.08
*Achievement Standards	70-81	.10	246-206	.38**
Reasoning	71-82	.16	247-207	.21

* Significant at <.05 level, two-tailed
** Significant at <.01 level, two-tailed

We see that there is in general somewhat higher agreement between mothers and fathers of second-grade boys, except for two scales, Resemblance to Parent and Democracy, where the correlations have dropped even closer to zero. Most of the second-grade attitude scales which have correlations between mother and father significant at the .01 level, however, are ones which were not included in the earlier questionnaires: Demands for Aggression, Punitiveness, Positive Mother-Father Relationship, and Sex-Role Expectations. There are only two scales, Restrictiveness and Achievement Standards, where we can say that there has been some change in consistency. (The differences between these correlations are at the $p<.20$ level for Restrictiveness and the $p<.10$ level for Achievement Standards, using a two-tailed test.) One may speculate, however, using somewhat the same argument we applied to the apparent lack of consistency over time in attitudes towards self-sufficiency, that parental agreement in attitudes may be in part a function of the child's developmental status, and the amount of information parents have received about his relative level of achievement or competence as compared to others of his own age. One might argue, then, that mothers and fathers tend to converge in their Achievement Standards or their Restrictiveness towards a boy as they get more information from the school and elsewhere about his actual achievement or responsibility. We plan to explore further the possibility that changes over time in agreement between particular pairs of parents with respect to achievement standards, as well as the level of demands, may be a function of their son's actual achievement in school.

c. Age Expected Independence

As an additional measure of parents' positive demands for self-sufficiency we used the Age Expected Independence scale. This instrument was adapted by Elizabeth Bing (see Bing, 1963) from the Winterbottom (1958) scale, and further slightly revised by us so as to be appropriate for boys of the particular age level of our sample. The scale includes 22 items referring to various self-help behaviors, or to various aspects of competence and responsibility. The parent is instructed to indicate for each of these items at what age he would "expect the average child to have learned this behavior." The same set of items was used for mothers and fathers, and included in the Parent Data Sheets (described in Section d below.)

The score on this scale is simply the mean of the parent's responses to all of the items, i.e., the average age at which he expects the behaviors listed to have been learned by the "average" child. A lower score indicates a lower average age, and therefore that the parent expects independence relatively early. It was hoped that this somewhat more indirect measure of parental expectations might provide additional information to that revealed by the more direct SPQ items. Split-half reliability of the scale is .77 for mothers and .80 for fathers (corrected for attenuation by the Spearman-Brown formula.)

For the second-grade sample of parents, scores on this scale correlate as follows with the SPQ scales in the "positive demands for self-sufficiency" cluster:

	Mothers	Fathers
Contingent Reward	-.19	.01
Democracy	-.12	-.01
Rewarding Independence	-.06	-.10
Achievement Standards	-.16	-.01
Reasoning	-.06	-.02

These correlations are all in the right direction, but none is significantly different from zero. The highest correlation for both mothers and fathers is with the Use of Models scale (r's = .25, .24), i.e., parents who use models expect independence later.

d. Parent Data Sheets

The questionnaires distributed to the parents of our second-grade sample were preceded by data sheets to be filled out by each parent, and containing a number of factual questions about the child and the family. Copies of the Mother and Father Data Sheets are included in Appendix E.

The parents' answers to these questions were coded, and scores assigned to each case in the sample whose parents completed the questionnaires on the following variables:

Mother Data:

1. Amount of the child's nursery school experience, if any.
2. Number of adults in the household.
3. Whether the child had been separated from one or both parents during the past three years by death, divorce, etc.--a measure of disruption of the child's life situation.
4. Number of children in the family.
5. Ordinal position of the child in the sample.
6. Mother's education.

7. Mother working--amount of time spent in employment, if any.
8. Continuity of parental relationship--amount of time child had spent away from parent.
9. Mother's verbal interests--number of interests listed which were judged to be primarily verbal, e.g., reading, dramatics, political work.
10. Mother's non-verbal interests--e.g., sewing, sports.
11. Mother's reading time--amount of time per day parent estimated she usually spent reading.
12. Child's participation in mother's activities--parent's estimate of amount of time child spent participating in her activities.

Father Data:

1. Parental relationship--whether parent child's natural father or not.
2. Father's education.
3. Continuity of relationship.
4. Verbal interests.
5. Non-verbal interests.
6. Father's reading time.
7. Interest in sports--as distinguished from other non-verbal interests.
8. Amount of time (per average week) father spent in manual activities, other than sports--e.g., crafts, fixing things around the house.
9. Child's participation in father's activities.

The information provided by these items on the Parent Data Sheets has been used in Section A above in describing the characteristics of our sample of second-grade boys and their parents. Some of these variables will also be examined in relation to our measures of achievement and child personality.

CHAPTER IV - ANALYSES OF THE DATA AND FINDINGS

In Chapter II we presented a series of hypothese in three different areas: (1) the relationships between certain aspects of personality functioning and ability and achievement, (2) the relationships of the achievement-related personality variables to antecedent and concurrent parent attitudes and (3) the relationships of the parent attitudes to ability and academic achievement. We shall examine the data bearing on the hypothesized relationships in these three areas. First, however, we shall describe our general strategy of data analysis, and present the interrelationships among our various measures of (1) ability and academic achievement and (2) personality variables.

A. Analysis of the data

The basic design of this study was a correlational one. We predicted certain relationships between sets of variables, and these predictions were to be tested in terms of the degree of significance of the obtained correlations between the measures of these variables. The measures employed have been described in the preceding chapter. Each subject's score on each measure was coded and transferred to an IBM card. Our complete data deck consisted of 17 cards for each subject, with a total of 254 variables. Although our specific predictions involved only a small number of all the possible intercorrelations among these 254 variables, the simplest strategy seemed to be to obtain a complete intercorrelation matrix. In some cases, e.g., for the distraction measures, we had included in the data deck part-scores which would enable us to obtain reliability coefficients, and there were a number of other reasons which made it desirable to have complete information about the interrelationships among our measures.

This posed a problem. The final sample of second-grade boys included in the study numbered 104. We made every effort to obtain complete data on the current measures collected, and succeeded in a number of cases. For the teacher-ratings, the peer-ratings, the achievement measures, the PMA, the WISC and the experimental measures collected during second-grade, we have complete data or are missing only one to four cases. It was not possible, however, to obtain complete returns on the parent questionnaires, and so for those measures as well as for most of our data collected during the previous two school years, our N's are substantially less than 100, varying from 96 to 31. It was necessary either to divide our variables into a number of subgroups for which the same numbers of observations were available, and then run a series of separate intercorrelation matrices, or to devise an intercorrelation program (for the IBM 7090 electronic computer) which would handle data with missing cases for some variables. The latter alternative seemed preferable, and such a program was devised (by G. W. Walster). The listed output of this program reports, for each comparison between two variables, the N available for that comparison (being the N for the variable with the smaller number of observations), the means and variances for each variable (calculated over those cases included in the correlation) and the product-moment correlation between them. The data to be reported are the output of this program. In the case of some variables which were dichotomous, or whose distributions were badly truncated or skewed, a product-moment correlation is not a suitable measure of association. Note will be taken of this where appropriate in reporting results, and in some cases different measures of association will be used.

B. Findings

1a: THE INTERRELATIONS OF THE MEASURES OF ABILITY AND ACHIEVEMENT

Both the WISC and the PMA may be considered as predictors of academic success. Their correlations with our achievement measures are shown below:

Table 4.1: Intercorrelation of Aptitude and Achievement Measures*

	First Grade Achievement				Second Grade Achievement			
	N	PWR	PSR	PPR	Arith. read	Arith. fund.	AWR	APR
WISC V	101	.44	.44	.49	.41	$.24^2$	.46	.41
WISC Q	101	$.26^1$	.32	.36	$.27^1$	$.19^4$	.37	$.28^1$
WISC T	101	.43	.47	.52	.41	$.26^1$	.50	.41
PMA V	100	.37	.36	.42	.32	$.06^4$	.44	.41
SPACE	100	$.22^3$	$.23^2$	$.28^1$	.35	$.20^3$	.33	$.30^1$
NUMBER	100	.58	.58	.61	.61	.44	.64	.57
PERCEPT	100	$.18^4$	$.23^2$	$.23^2$	.40	.38	.34	.42
TOTAL	100	.46	.48	.53	.60	.39	.60	.57

*Significant at .001 level unless stated. 1-.01 2-.02 3-.05 4-N.S.

It is noted that all of the measures are positively related to achievement, significantly so in most cases. However, WISC performances and PMA Space scores correlated generally lower than the other measures. The highest correlations (often significantly higher than others) are with the PMA Number and Total score.

The Number sub-test is uniformly high. Such a numerical test also involves verbal ability in that the directions and general test-taking aspects of group tests largely rest on verbal skills. Some of the number problems are also stated verbally. Thus, doing well on the Numbers test reflects skill of a non-verbal and verbal nature, whereas the Verbal subtest is composed exclusively of verbal symbols. The Number sub-test, then, calls for skills encompassing both domains, and this may account for its higher correlations than other predictive measures of proficiency.

Table 4.2 below presents the intercorrelations of the WISC and PMA measures.

Table 4.2: Correlations of WISC and PMA for second grade boys (N-103)

	Verbal	Space	Number	Percept.	Total
WISC V	.57	.34	.54	.27	.57
WISC Perf.	.51	.52	.37	.47	.60
WISC Total	.65	.53	.56	.45	.72

When two variables are intercorrelated and are, in addition, correlated to the same set of variables, it is usually assumed that this correlation represents shared variance, accounting for the relationship to the criterion measure. It is noted that the correlation of Total WISC and Total PMA is very high (r-.72). It is also noted that the correlations of WISC Total and PMA Total with first grade achievement measures are almost equal in size, whereas differences exist when comparing their correlations with second-grade achievement. The difference between the correlation of WISC Total and PMA Total with Arithmetic reasoning approaches significance (c.r. - 1.81, p-.06); this is also true for Advanced Primary Reading (c.r. - 1.50, p-.12).

The correlations of the number sub-test of the PMA are consistently higher than all of the WISC scores including total scale.

Aptitude tests are essentially predictive measures of how well a child will do in school. Most studies of predictors of academic success have shown that the proficiency measure or achievement test is a better predictor of academic achievement than the aptitude test. The PMA superiority, as reflected by the higher correlations of PMA Total and the Number sub-test, lead us to suspect that the WISC may come nearer to being a measure of "innate" intelligence, while the PMA is an achievement measure.

We have some support for this belief in the correlations of Fathers' and Mothers' education and the two ability tests. These results are reported below.

Table 4.3: Correlation of Fathers' and Mothers' education with WISC and PMA

		WISC				PMA					
		V	P	T	N	V	S	N	P	T	N
Fathers' Ed.	181	.36	.22	.36	67	.37	.22	.21	.11	.26	66
Mothers' Ed.	221	.18	.10	.19	79	.19	.04	.23	.18	.21	79

The total PMA correlates with Fathers' education less than the Total WISC, although not significantly so. In presenting the relationships of the achievement variables to parent attitudes, we will consider PMA as a possible achievement variable. We shall also present the relationships between the WISC scores and parent attitudes, and compare them with the relationships between parent attitudes and the achievement measures. Where appropriate, we shall use partial correlations to explore any relationships which seem to exist between parent attitudes and achievement in second-grade "over and above" their relationship to measures of ability.

INTERCORRELATIONS OF ACHIEVEMENT VARIABLES:

The achievement test scores are significantly positively intercorrelated, as one would expect. The sub-tests of the same test are more highly intercorrelated, and this is also expected. Reading is more highly intercorrelated with other reading measures than are arithmetic tests. This has been demonstrated in many other studies and can be hypothesized as due to the combination of skills usually called for in an arithmetic test. As discussed above, arithmetic tests involve verbal and numerical skills as well as skill in following directions, whereas verbal tests usually deal exclusively with verbal symbols. The intercorrelations between arithmetic tests are very similar to the intercorrelations between reading and arithmetic, supporting the hypothesis. Results for the study and total sample are reported in Table 4.4.

Not only are the achievement measures from first grade highly intercorrelated, but, in addition, there are significantly positive relations between first-grade and second-grade achievement for both reading and arithmetic. Proficiency measures of this nature remain, as Cronbach (1960) has stated, the best predictor of future success.

The patterns of intercorrelation for the achievement data of the sample of boys included in the study and the larger group of second-grade boys are very similar and no significant differences appear.

We also proposed to include among our criterion measures teachers' and peers' ratings of achievement, which may be considered measures of achievement reputation. The variables included are: second-grade teachers' ratings of Reading Achievement and Arithmetic Achievement and the PNI residual and raw-score scales of Academic Achievement. The

Table 4:4 Intercorrelations of Achievement Variables

Variable	Grd.	31	32	33	36	37	38	39	35	40
31. Primary Word Reading	1		.84	.86	.84	.72	.37	.63	.53	.58
32. Primary Sentence Reading	1			.83	.72	.70	.36	.37	.47	.51
33. Primary Paragraph Reading	1				.79	.68	.41	.62	.51	.61
36. Word Reading	2					.81	.44	.67	.57	.64
37. Paragraph Reading	2						.41	.61	.54	.57
38. Verbal - PMA	2							.32	.06	.39
34. CAT Reasoning	2								.62	.61
35. CAT Fundamental	2									.44
40. PMA Number	2									

relationships between these achievement-reputation measures and the test scores for ability and achievement are shown in Table 4.5. Table 4.6 shows the intercorrelations of the achievement-reputation measures. The teachers' ratings for both aspects of achievement are significantly correlated to all the tests of both ability and achievement. However, the magnitude of the correlations is greatest for the achievement tests, especially reading achievement, next for the PMA, and least for the WISC. The teacher-rating of Number Achievement seems to be about equally highly correlated with the Reading and the Arithmetic test scores. The Reading Achievement rating seems to discriminate somewhat in the expected fashion, even though the two teacher rating scales intercorrelate .70. The two PNI scales correlate significantly with all of the achievement test scores, although the correlations for the raw-score scale are naturally higher. The raw-score scale also tends to be more closely related to the ability measures than is the residual scale. The latter is only slightly correlated with the WISC.

In view of these relationships, it certainly seems legitimate to consider both teachers' and peers' ratings as measures of achievement, and we shall do so in the sections which follow. It is also worth noting at this point that earlier teacher-ratings of Readiness for first grade (by kindergarten teachers, variable 84) as well as Success in First Grade (variable 91) seem to be excellent predictors of achievement, especially in reading. They are quite highly correlated with the later ratings of achievement by both teachers and peers, and the kindergarten teacher's rating of Readiness also seems to be an excellent predictor of ability, especially verbal ability, as measured by the WISC.

Table 4.5: Correlations between Ratings of Achievement and Achievement and Ability Test Scores

	ACHIEVEMENT					
	TR-2nd Gr Reading Achievement	TR-2nd Gr Numerical Achievement	PNI Academic Achvmnt Residual	PNI Academic Achvmnt Raw	Readiness for 1st Grade	Success in 1st Grade
ABILITY	99	105	158	168	84	91
2 WISC-Verbal	.40**	.49**	.27**	.45**	.54**	.36**
3 WISC-Performance	.25**	.24*	.09	.25**	.35**	.30**
4 WISC-Full Scale	.38**	.43**	.22*	.42**	.55**	.39**
38 PMA-Verbal	.32**	.35**	.14	.33**	.45**	.25**
39 PMA-Space	.22*	.30**	.17	.13	.32**	.15
40 PMA-Number	.45**	.63**	.35**	.51**	.45**	.58**
41 PMA-Perceptual	.22*	.26**	.25**	.18	.27**	.28**
42 PMA-Total	.41**	.52**	.32**	.39**	.45**	.45**
31 Primary Word Reading, 1st	.62**	.62**	.34**	.55**	.49**	.63**
32 Primary Sentence Reading, 1st	.64**	.62**	.40**	.57**	.49**	.60**
33 Primary Paragraph Reading, 1st	.56**	.55**	.29**	.51**	.50**	.59**
36 AWR-Reading Achievement, 2nd	.66**	.64**	.39**	.60**	.51**	.54**
37 APR-Reading Achievement, 2nd	.57**	.57**	.34**	.32**	.48**	.52**
34 CAT-Reasoning	.48**	.59**	.39**	.51**	.41**	.56**
35 CAT-Fundamentals	.37**	.50**	.23**	.43**	.33**	.55**

** p< .01, 2 - tail

* p< .05, 2 - tail

Table 4.6: Correlations among Achievement Reputation Measures

	TR-2nd Gr Numerical Achievement 105	PNI Academic Achvment Residual 158	PNI Academic Achvment Raw 168	Readiness for 1st Grade 84	Success in 1st Grade 91
99 TR (2nd)- Reading Achievement	.70	.33	.69	.34	.55
105 TR (2nd)- Numerical Achievement		.44	.70	.44	.61
158 PNI (Residual) Academic Achievement			.33	.39	.23
168 PNI (Raw) Academic Achievement				.40	.58
84 TR (K) Readiness for Gr 1					.50
91 TR (1st) Success in Gr 1					

All correlations > .27 are significant at .01 level, 2 tailed.

All correlations > .22 are significant at .05 level, 2 tailed.

2. INTERRELATIONS OF PERSONALITY MEASURES

a. Self-sufficiency

In our original proposal, we considered self-sufficiency as a construct separate from mastery of non-academic subjects. As we begin to look at the correlations between the self-sufficiency and mastery variables, it appears as if such a distinction may be an artificial one. However, since we collected 15 measures of self-sufficiency, it seems reasonable at this point to consider these measures separately from the other measures of mastery.

Mlodnosky, in her dissertation, raised the point that independence was not as global a construct as implied in the measures used by researchers such as Doll and Winterbotton. She felt that at least to begin with, one might try to separate out instrumental from emotional independence, calling the former self-sufficiency. As used in this study, then, self-sufficiency refers to the instrumental qualities of behavior. It describes a class of behaviors which include undertaking responsibility for self-care and using initiative to do things on one's own without extensive assistance from others. As we began to think further about the concept of self-sufficiency, it occurred to us that self-sufficiency behaviors could be further divided into those behaviors which seemed to arise purely from the child's desire for mastery and those behaviors which happened to conform to socialization standards set up by the school and the home. In the case of behaviors which conform to socialization standards, it might be difficult to decide whether the child were motivated to be self-sufficient and/or to gain approval from others by his performance.

As with our other measures of personality variables, we obtained ratings of self-sufficiency from teachers in kindergarten, 1st and 2nd grade. The measure of self-sufficiency obtained from the parents in kindergarten was n overall measure of self-sufficiency which included items measuring both mastery and conformity (variables 43 and 44). The overall measure of self-sufficiency collected from the parents in second grade included also a breakdown into two subscales: mastery and conformity.

The teachers' ratings of self-sufficiency at the kindergarten and first grade level seemed comparable to the overall measure of self-sufficiency collected from the parents, and included the idea of mastery and of conformity to socialization standards in the classroom.

At the second grade level, both the teachers& and peers' ratings of self-sufficiency measured simply the degree to which the child sought help from the teacher in connection with his academic work.

A look at the intercorrelations among the various measures of self-sufficiency (Table 4.7) leads to the following conclusions:

1. Fathers and mothers agreed moderately well with one another in judging their child's self-sufficiency when the boys were in kindergarten (43 r 44: .48, $p<.01$*).
2. Interestingly enough, at the second grade level, when we consider the measure of self-sufficiency which combines mastery and conformity items, the correlation between fathers' and mothers' assessments of their sons' self-sufficiency was also .48, $p<.01$.

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*All significance levels based on two-tailed test.

Table 4:7. Intercorrelations among Measures of Self-Sufficiency

	44	208	209	210	248	249	250	88	98	109	162	172
43. Mo. Child Behavior Dscrpt.	.48*	.33*	.29*	.24	.43**	.28*	.40**	.25*	.25*	.45**	.02	-.09
44. Fa. Child Behavior Dscrpt.		.66**	.67**	.44**	.43**	.41**	.15	.16	.31	.31*	.00	-.17
208. Fa. Report Self-Sufficiency, 2nd			.90**	.70**	.48**	.53**	.18	.37**	.26*	.25*	-.22	-.08
209. Fa. Rep. Mastery 2nd Gr.				.32*	.40**	.60**	-.01	.39**	.25*	.15	-.20	.00
210. Fa. Rep. Conformity 2nd Gr.					.38**	.17	.40**	.16	.16	.29*	-.15	-.18
248. Mo. Rep. Self-Sufficiency, 2nd Gr.						.78**	.70**	.36**	.23*	.32**	-.06	-.11
249. Mo. Rep. Mastery 2nd Gr.							.15	.30*	.24*	.17	-.06	-.06
250. Mo. Rep. Conformity 2nd Gr.								.23*	.04	.28*	-.07	-.19
88. Maturity-TR (K)									.37**	.35**	-.37**	-.29*
98. Maturity-TR (1st)										.45**	-.16	-.39**
109. Self-Sufficiency TR (2nd)											-.23*	-.58**
162. PNI (Residual) Help-Seeking												.26*
172. PNI (Raw) Help-Seeking												

** $p < .01$, 2 - tail
* $p < .05$, 2 - tail

3

3. When we separate out the items in the self-sufficiency scale which seem to measure desire for mastery from the items which seem to measure conformity to socialization standards, we get a high degree of agreement between fathers and mothers in assessing their sons' mastery at the second grade level (209 r 249: .60, $p<.01$), while the parents seem to agree somewhat less well, although still significantly, on the degree to which their sons conform to socialization demands made in the home (210 r 250: .40 $p<.01$). This is understandable when we consider that the mothers are usually more responsible on a day to day basis for seeing that the socialization demands are being carried out and may therefore tend to be more involved in this aspect of self-sufficiency than the fathers, thus judging their sons' behaviors in this dimension on a somewhat different basis than fathers.

4. There seemed to be moderately high consistency over a two-year period in the mothers' assessment of their sons' self-sufficiency (43 r 248: .43 $p<.01$).

5. It is of great interest that the 29 fathers who remained in our sample over the two-year period showed an even higher consistency over time in their judgments of self-sufficiency than did the mothers (44 r 208: .66 $p<.01$). It is difficult to know what to make of this finding. This degree of consistency may be characteristic of all fathers or it may result from a bias in our sampling such that the 29 fathers who were consistent enough to remain in the sample over a two-year period may also tend to be more consistent than ordinary in their assessements of their sons' behaviors.

6. It is also of interest to note that the mothers' ratings of self-sufficiency in kindergarten were more highly correlated with second grade conformity (43 r 250: 40, sig. .01) than with mastery (43 r 249: .28 sig. .05). For fathers, the opposite held, and fathers' ratings of self-sufficiency at the kindergarten level were more highly correlated with mastery at the second grade level (44 r 209: .67 p<.01) than they were with conformity (44 r 210: .44, p<.05).

7. The teachers' ratings of self-sufficiency were more broadly defined measures that had to do with the child's ability to do things for himself without asking an inordinate amount of help from his teacher. At the second grade level this referred more specifically to doing his schoolwork without seeking inordinate help, while at the kindergarten and first-grade level it referred more to the child's ability to care for his own needs (self-care).

The agreement between teachers over the three-year period in their judgments of a child's self-sufficiency was moderately high (the three intercorrelations ranging from .35 to .45, all significant at the .01 level). It must be remembered that the agreements reported were of ratings made by a large number of teachers at each grade level, and different teachers at the different grade levels. Therefore, these agreements would indicate trait consistency over time rather than the reliability of the rater.

8. Although in the original Mlodnosky sample the mothers' ratings of self-sufficiency at the kindergarten level were highly significantly correlated with the kindergarten teachers' ratings of

self-sufficiency (significantly less than .0005 level, one-tail), this was not true of the sample remaining in our project (43 r 88: .25, sig. .05). The degree of correlation was about the same in the two cases, however, the difference being one of N. The correlation between kindergarten teacher ratings and fathers' reports was not significant (44 r 88: .16). The mothers' ratings of self-sufficiency at kindergarten level were not highly predictive of teachers' ratings of self-sufficiency in the first and second grades either, though the correlations were significant at the .05 level (43 r 98: .25, 43 r 109: .24). The correlation between fathers' ratings of self-sufficiency at kindergarten level and first and second grade teachers' ratings of self-sufficiency was .31 in both cases. For our sample of 29 fathers, this was significant only at the .05 level.

9. If we look at the intercorrelations between parents' ratings of self-sufficiency at the second grade level and teachers' ratings of self-sufficiency at the kindergarten, first and second grade levels, we see that:

   a. Mothers' ratings of self-sufficiency are in general as highly correlated with teachers' ratings as are fathers' ratings of self-sufficiency.

   b. Both parents' ratings of self-sufficiency at the second grade level were more highly correlated with kindergarten teachers' ratings of self-sufficiency than they were with ratings done in the first and second grade. This is probably because both kindergarten teachers' ratings and parents' ratings were measuring self-sufficiency with regard to self-help and non-academic types of behavior, while the teachers in first and second grade probably measured self-sufficiency in terms of response to academic tasks.

c. If we look at the difference between the correlations with parents' ratings of mastery as compared with parents' ratings of conformity, we can see that the kindergarten and first grade teachers' ratings of self-sufficiency are more highly correlated with parent ratings of mastery, while the second grade teachers' ratings of self-sufficiency correlated more highly with conformity. This finding can probably be explained by the difference in our wording of the Teachers' ratings scales at second grade, which stressed doing academic work without asking for help, while teacher rating of subjects in kindergarten and first grade were really more related to self-care or mastery.

10. The parents' ratings of self-sufficiency both at the kindergarten and second grade levels were not significantly related to the second grade children's ratings of help-seeking.

11. As might be expected, there are moderately high negative correlations between the PNI measure of low self-sufficiency and the teachers' ratings of high self-sufficiency. As one would guess, the highest is a negative correlation of -.58 between second grade teacher rating of self-sufficiency (essentially low help-seeking) and the PNI raw score measuring amount of help seeking from teacher in the classroom. However, the residual score for this PNI scale is also significantly negatively related to two of the teacher ratings, particularly the earliest one.

We may summarize these findings on the interrelationships of the self-sufficiency measures as follows: Parents agree fairly well with each other and are fairly consistent over time in their reports about their sons' degree of self-sufficiency. Mothers seem to be more consistent in their reports about self-help behavior, which involves conformity to adult demands, whereas fathers seem to report more consistently on their sons' spontaneous mastery. Teachers' ratings of self-sufficiency are quite consistent over time, and this in spite of the fact that different groups of teadhers were involved. There is a generally significant, although not very high, degree of agreement between parents' and teachers' ratings of self-sufficiency. The amount of agreement seems to vary somewhat, depending on whether the behavior being rated involves general self-help and initiative or conformity to adult demands for self-sufficiency--the latter being more relevant to the structured classroom situation. Peer ratings of help-seeking correlate in the expected negative direction with current teacher ratings of self-sufficiency, but are in general unrelated to parents' reports. The explanation would seem to be that the observations of teachers and peers were both made in the classroom, whereas parents' were not. We may offer the general conclusion that our measures of self-sufficiency involve some variance which is specific to the situation or to the particular kind of self-help behavior being reported, but they give considerable evidence of a general behavior dimension or trait which has some stability over time.

b. Mastery

The concept of "mastery" as used in this study is really a rather global one and includes parents' ratings of "mastery" (variables 205, 245), the child's ability to play constructively or purposefully at the kindergarten and first grade level (variables 85, 97), the child's physical ability as rated by his teachers at the kindergarten, first and second grade levels (variables 89, 94, 102), self-confidence and curiosity as rated by second grade peers (variables 175, 176) and the child's adoption of a masculine role as measured by an experimental picture test of masculine role choice (variable 48) and by ratings of masculinity by the IQ tester and first and second grade teachers (variables 87, 93, 102).

As Table 4.8 shows, there is fairly good consistency among all of these measures. The poorest relationships are for the parent scale, for instance father's report of mastery correlates negatively with the first-grade teachers' ratings of masculinity. It was noted in Chapter III, however, that these two parent scales have low reliability, and furthermore, mothers' and fathers' reports do not agree with each other. Both parents' scores are, however, correlated with the readiness ratings, the mother's score is consistently related to the teacher ratings of physical ability and the father's score is related to the peer-rating of self-confidence.

c. Impulse control

One of the questions which may be raised in considering the construct "impulse control," "impulse management" or "ego-efficiency" is whether this is a global variable or whether the construct can be further broken down to include a number of sub-constructs such as "attentiveness," "persistence," "resistance to distraction," "impulsivity," "conformity" or "social inhibition."

A second question one may ask is whether impulse control may be considered a personality characteristic which will show itself similarly

Table 4:8. Intercorrelations of Mastery Variables

	245	84	95	85	97	89	94	102	175	176	48	29	93	103
205. Fa. Rep.-2nd	-.08	.30*	.28*	.14	.11	.14	-.05	-.07	.28*	.01	.09	.03	-.21	-.06
245. Mo. Rep.-2nd		.13	.23	.00	.13	.18	.23*	.30*	.06	.11	.03	.09	.16	.14
84. TR (K)-Readiness for 1			.55**	.53**	.27*	.42**	.14	.27*	.30**	.24*	.11	.36**	.05	.33**
95. TR (1st)-Readiness for 1				.40**	.61**	.36**	.33**	.50**	.44**	.37**	.23*	.20	.23	.43**
85. TR (K)-Constr. Play					.36**	.45**	.08	.24*	.26*	.13	.04	.30*	.09	.28*
97. TR (1st)-Constructive Play						.47**	.37**	.40**	.40**	.32**	.27*	.34**	.26*	.33**
89. TR (K)-Physical Ability							.39**	.45**	.33**	.24*	.08	.40**	.29*	.40**
94. TR (1st)-Physical Ability								.48**	.07	.20	.38**	.28*	.57**	.32**
102. TR (2nd)-Physical Ability									.30**	.37**	.08	.32**	.49**	.67**
175. PNI (Raw)-Self-Confidence										.59**	-.06	.09	-.02	.41**
176. PNI (Raw)-Curiosity											.01	.10	.26*	.27*
48. Masculinity-Wrights Mas.												.22	.17	.04
29. Masculinity-IQ Ratings													.29*	.15
93. Masculinity-TR (1st)														.32**
103. Masculinity-TR (2nd)														

** p < .01, 2-tail

* p < .05, 2-tail

in a number of settings (i.e., will a child who shows poor impulse control in the classroom at school also show poor impulse control in an individual intelligence testing situation, in an assessment situation designed to measure distractibility, and at home?) Or does the degree of impulse control vary according to the setting (i.e., maybe a child will show poor impulse control at home, but be well able to manage his impulses in the classroom?)

These questions are difficult to answer with generalizations, partly because our measures of impulse-control are considerably more diverse than the measure of the other personality dimensions. All were collected at second grade level, however, so we cannot examine the question of consistency over time. The measures consist of the I.Q. examiner's and peer ratings of attentiveness, the two experimental measures of susceptibility to distraction, teachers' and peer ratings of impulsivity, mothers' and fathers' reports of impulse control, peer ratings of conformity and quietness, the I.Q. examiner's and teacher ratings of persistence, and the experimental measure and teacher-rating of avoidance of failure. Originally the delay of gratification test was also included, but since it showed no relationships with any of the other measures in this area, it was dropped. When we examine the intercorrelations of the impulse-control measures shown in Table 4.9, we find that:

1. The experimental measures of susceptibility to distraction are unrelated to the other measures, except for one negative correlation with the IQ examiner's rating of attentiveness and a slight positive relationship with the teacher-rating of poor self control (impulsivity).

Table 4:9 Intercorrelations among Measures of Impulse Control

	26	101	104	106	167	171	174	169	157
24 Attentiveness-IQ rater	.46**	-.24*	-.12	.25**	.22*	-.20*	.14	.19*	.08
26 Persistence-IQ rater		-.05	-.15	.16	.06	-.01	-.05	.07	.07
101 Poor Self Control-TR (2nd)			.30**	-.55**	-.62**	.64**	-.37**	-.56**	-.24**
104 Avoidance of Failure-TR (2d)				-.48**	-.35**	.27**	.05	-.37**	.06
106 Persistence-TR (2nd)					.71**	-.60**	.29**	.67**	.19*
167 Attentiveness-PNI (Raw)						-.79**	.45**	.95**	.36**
171 Impulsivity-PNI (Raw)							-.39**	-.73**	-.24*
174 Social Inhibition-PNI (Raw)								.37**	-.42**
169 Conformity-PNI (Raw)									.13
157 Attentiveness-PNI (Residual)									
161 Impulsivity-PNI (Residual)									
164 Social Inhibition-PNI (Residual)									
159 Conformity-PNI (Residual)									
211 Impulse Control-Fa.Rep. (2nd)									
251 Impulse Control Mo.Rep. (2nd)									
149 Distraction-Diff. Correct									
152 Distraction-Error Increase									
51 Avoidance of Failure									

Table 4:9 (continued)

	161	164	159	211	251	149	152	51
24 Attentiveness-IQ rater	-.04	.04	-.09	.13	.26**	-.07	-.23*	-.06
26 Persistence-IQ rater	.11	-.10	-.07	.12	.25*	-.11	-.09	-.14
101 Poor Self Control-TR (2nd)	.37**	-.26**	-.19*	-.24*	-.36**	-.01	.19*	.17
104 Avoidance of Failure-TR (2nd)	-.11	.19	.02	-.07	-.06	-.12	.00	-.03
106 Persistence-TR (2nd)	-.19*	.10	.04	.42**	.41**	.05	-.08	-.18
167 Attentiveness-PNI (Raw)	-.36**	.22*	.25**	.34**	.32**	-.05	-.21*	-.15
171 Impulsivity-PNI (Raw)	.45**	-.32**	-.34**	-.26**	-.29**	.08	.23*	.17
174 Social Inhibition-PNI (Raw)	-.71**	.86**	.41**	.23*	.23*	.08	.06	-.13
169 Conformity-PNI (Raw)	-.28**	.14	.37**	.36**	.34**	-.07	-.16	-.20*
157 Attentiveness-PNI (Residual)	-.33**	.46**	.12	.12	.06	.08	-.09	-.01
161 Impulsivity-PNI (Residual)		-.81**	-.43**	-.19	-.18	-.09	-.04	.19*
164 Social Inhibition-PNI (Residual)			.24*	.16	.11	.09	.04	-.10
159 Conformity PNI (Residual)				.21*	.17	-.06	.09	-.20*
211 Impulse Control Fa. Rep. (2nd)					.66**	.01	.06	-.04
251 Impulse Control Mo. Rep. (2nd)						-.04	.02	-.16
149 Distraction-Diff. Correct							.31**	.11
152 Distraction-Error Increase								-.05
51 Avoidance of Failure								

** $p < .01$, 2 - tail

* $p < .05$, 2 - tail

2. The correlations for the avoidance of failure measures are also quite low, except that the teacher-rating correlates in the expected direction with other teacher-ratings. The experimental measure does, however, have low correlations in the predicted direction with ratings of impulsivity, conformity and persistence.

3. In general the ratings by parents, peers, teachers, and the IQ examiner intercorrelate fairly well, although of course measures from the same source always intercorrelate more highly than others.

4. The variables we had thought were measuring a single theoretical subconstruct (e.g., the measures of attention) correlated no more highly with one another than they did with the other measures of impulse control (e.g., persistence, impulsivity, etc.). The reason for this may be partly that we did not really have comparable measures of the same subconstruct for different settings.

5. Measures of impulse control obtained from a particular setting (e.g. 1) teachers' and peers' ratings of impulse control in the classroom, or 2) mothers' and fathers' judgments of impulse control at home) were more highly intercorrelated than were correlations of a similar subconstruct (e.g., attentiveness) measured in two different settings.

At this point we were inclined to return to our original position that, at least for second grade boys, impulse control is a global variable. Although there may be many different aspects to impulse control (e.g., attention, persistence, etc.), raters judging a child's behavior in a particular setting seemed to feel that these were highly interrelated. In other words, if a child shows good self-control in the classroom, he is also seen as being persistent.

What makes us feel even more convinced of the importance of the setting in influencing degree of impulse control a child shows was that the classroom ratings of impulse control were made by teachers and peers in 25 different classrooms. Furthermore, in the home setting mothers and fathers agreed highly with one another in their judgment of their son's impulse control, while in general they did not agree highly with one another in many of their attitudes about child-rearing, nor did they agree as highly with one another in their judgments of their son's self-sufficiency.

These findings give a partial answer to the above second question raised, for it would appear that the amount of impulse control shown by a second-grade boy will vary from setting to setting more than it will within any one setting. Again, it is difficult to make generalizations. Clinically, we would expect different patternings for different children. Some children will show poor impulse control in any situation in which they find themselves, while others will show poor impulse control in one situation and high impulse control in another. This study was not designed to take into account the different patternings of personality one would see clinically in looking at the children as individuals, but was designed to gain an overall picture of the relationship of certain personality characteristics in second grade boys to achievement and child-rearing attitudes. While this sort of an over view seems important as a beginning approach to the study of child personality, it must be noted that the necessity of overlooking individual differences in personality patterning probably accounts for the relatively low correlations one finds in such studies as these.

6. For the purposes of this study it seems legitimate to conclude that the measures from these different sources of attentiveness, persistence, conformity, quietness, impulse control and impulsivity (reversed) may be said to provide a fairly coherent picture of the individual child's relative adequacy of impulse-management (or ego-effectiveness).

d. Social adjustment

The two primary measures of popularity (second grade teachers' ratings--var. 108 and PNI raw score measure of popularity--var. 170) were moderately highly intercorrelated (r = .56, see Table 4.10). The PNI residual scale score of popularity, however, was not related to either of the other measures of popularity, nor was it highly related to the teachers' ratings of social virtues. In fact, the PNI residual scale popularity measure was negatively related to social virtues as rated by first- and second-grade teachers. The ratings of social virtues by kindergarten, first- and second-grade teachers were moderately highly interrelated with one another and with the two measures of popularity. In all, the PNI and teachers' ratings of popularity and the measures of social virtues would all seem to be good measures of the child's social adjustment in the classroom.

e. Interrelationships among personality dimensions

Our original hypotheses did not in any sense assume that these four aspects of child personality would be unrelated to each other. In fact, we predicted that all of them would be positively related to achievement and would reflect the same general set of parent attitude antecedents. We would therefore expect that the four sets of child-personality measures

Table 4:10. Intercorrelations among Social Adjustment Measures

		160	170	86	92	100
108	Popularity - TR (2nd)	.00	.56**	.26*	.44**	.61**
160	Popularity - PNI (Residual)		.11	.17	-.23*	-.24*
170	Popularity - PNI (Raw)			.34**	.40**	.47**
86	Social Virtues TR (K)				.40**	.33**
92	Social Virtues TR (1st)					.52**
100	Social Virtues TR (2nd)					

* $p < .01$, 2 - tail

** $p < .05$, 2 - tail

would show a considerable degree of correlation with each other. Tables 4.11 through 4.16 present the correlations of the variables in each of the four areas with those in each of the others. These tables will not be discussed in any detail at this point. With a few minor exceptions, self-sufficiency, mastery and social adjustment intercorrelate positively although it must be borne in mind that many of these measures derive from the same sources (e.g., the correlations between two ratings, both by the same sets of teachers). Even when this is not the case, however, and we are not confronted with the strong possibility of halo-effects, there are very substantial positive correlations, e.g., between parents' reports of self-sufficiency and teachers' and peers' ratings of popularity. On the whole, the variables in these three areas seem quite closely related, and might be said to form a cluster defining a more general dimension of maturity or favorable adjustment as applied to boys of this age.

The group of variables classified under Impulse Control, just as they were seen to be somewhat less coherent among themselves, are somewhat less clearly related to the other three areas. In general, the ratings of impulse control (both teacher-ratings and parents' reports) correlate in the expected direction with the measures of self-sufficiency, mastery and adjustment. The experimented measures of susceptibility to distraction and of avoidance of failure also show some negative relationships to adjustment and self-sufficiency. The apparent inconsistencies concern primarily the peer-ratings as represented by several of the PNI scales. The PNI residual impulsivity scale correlates -.62 with the residual

Table 4:11. Correlations of Mastery and Self-Sufficiency Measures

MASTERY

	Fa.Rep. Mastery 2nd	Mo.Rep. Mastery 2nd	TR (K) Readiness for 1st	TR (1) Readiness for 1st	TR (K) Constructive Play	TR (1) Constructive Play	TR (K) Physical Ability	TR (1) Physical Ability
SELF-SUFFICIENCY	205	245	84	95	85	97	89	94
43 Mo. Child Behavior Dscrpt.	.04	.36**	.27*	.28*	.23	.28*	.16	.05
44 Fa. Child Behavior Dscrpt.	.11	.48**	.25*	.28*	.09	.31*	.34*	.21
208 Fa. Rep.-Self-Sufficiency-2nd	.11	.24*	.33**	.16	.39**	.24*	.39**	.08
209 Fa. Rep.-Mastery-2nd	.03	.25*	.30*	.07	.36**	.19	.37**	.10
210 Fa. Rep.-Conformity-2nd	.19	.12	.21	.24*	.24	.23	.22	.02
248 Mo. Rep.-Self-Sufficiency-2nd	.15	.25*	.21	.29**	.32**	.07	.33**	.24*
249 Mo. Rep.-Mastery-2nd	.02	.33**	.13	.23*	.25*	.20	.34**	.31**
250 Mo.Rep.-Conformity-2nd	.20	.03	.18	.17	.30**	-.09	.16	-.01
88 Maturity-TR (K)	.13	.14	.75**	.54**	.66**	.37**	.58**	.28**
98 Maturity-TR (1)	.19	.29*	.46**	.67**	.30**	.61**	.32**	.39**
109 Self-Sufficiency TR (2)	.01	.17	.35**	.63**	.32**	.39**	.31**	.17
162 PNI (Residual) Help-Seeking	-.09	.08	-.37**	-.28**	-.32**	-.11	-.22*	-.11
172 PNI (Raw) Help-Seeking	-.19	-.10	-.29**	-.45**	-.29*	-.33**	-.18	-.11

Table 4:11. (continued)

Correlations of Mastery and Self-Sufficiency Measures

MASTERY

SELF-SUFFICIENCY	TR (2) Physical Ability 102	PNI (Raw) Self-Confidence 175	PNI (Res.) Curiosity 176	Masculinity Wright's Mas. 48	Masculinity IQ Rater 29	TR (1) Masculinity 93	TR (2) Masculinity 103
43 Mo. Child Behavior Dscrpt.	.25*	.13	.17	.22	.14	.15	.38**
44 Fa. Child Behavior Dscrpt.	.45**	.24	.15	.15	.32*	.16	.32**
208 Fa. Rep.-Self-Sufficiency-2nd	.19	.14	.05	.07	.26*	.05	.25*
209 Fa. Rep.-Mastery-2nd	.24*	.10	.04	.01	.31*	.07	.26*
210 Fa. Rep.-Conformity-2nd	.03	.13	.06	.19	.05	.01	.10
248 Mo. Rep.-Self-Sufficiency-2nd	.29**	.09	.19	.27*	.05	.23*	.36**
249 Mo. Rep.-Mastery-2nd	.33**	.06	.18	.30**	.20	.36**	.33**
250 Mo. Rep.-Conformity-2nd	.10	.02	.11	.08	-.19	-.02	.20
88 Maturity-TR (K)	.36**	.31**	.18	.18	.35**	.20	.43**
98 Maturity-TR (1)	.41**	.44**	.36**	.20	.24*	.23*	.37**
109 Self-Sufficiency TR (2)	.48**	.49**	.35**	.17	.03	.07	.50**
162 PNI (Residual) Help-Seeking	-.23*	.01	.00	.03	-.24*	-.16*	-.09
172 PNI (Raw) Help-Seeking	-.24*	-.52**	-.05	-.05	.02	.10	-.31**

* $p < .05$

** $p < .01$

Table 4:12 Correlations between Impulse Control and Self Sufficiency

	IMPULSE CONTROL							
	Attentiveness IQ Rater	Persistence IQ Rater	Poor Self-Control TR (2)	Avoidance of Failure TR (2)	Persistence TR (2)	Attentiveness PNI (Raw)	Impulsivity PNI (Raw)	Social Inhbtn PNI (Raw)
SELF-SUFFICIENCY	24	26	101	104	106	167	171	174
43 Child Bhvr. Des.-Mo.	.07	.07	-.10	-.01	.25*	.11	-.07	.05
44 Child Bhvr. Des.-Fa.	.14	.08	-.16	-.21	.30	.29	-.17	.21
208 Self-Suf.-Fa. Rep.-2nd	.19	.07	-.17	-.13	.33*	.15	-.02	.03
209 Mastery-Fa. Rep.-2nd	.16	.06	-.11	-.11	.20	.05	-.08	.02
210 Conformity-Fa. Rep.-2nd	.15	.03	-.19	-.12	.39**	.24*	-.18	.02
248 Self-Suf.-Mo. Rep.-2nd	.34**	.13	-.13	-.10	.29*	.19*	-.10	.08
249 Mastery-Mo. Rep.-2nd	.30**	.21	-.07	-.14	.11	.07	.09	.06
250 Conformity-Mo. Rep.-2nd	.22	.02	-.12	.00	.30	.18	-.18	-.01
88 Maturity-TR (K)	.12	.27	-.04	-.22	.31**	.18	-.04	-.18
98 Maturity-TR (1)	.38**	.30**	-.33	-.33**	.48**	.48**	-.31**	.22*
109 Self-Suf.-TR (2)	.10	.00	-.35**	-.47**	.69**	.60**	-.47**	.15
162 Help-Seeking PNI (Raw)	-.17	-.08	-.21	.14	-.02	.17	-.19*	.28**
172 Help-Seeking PNI (Raw)	-.23*	-.03	.48**	.37**	-.56**	-.74**	.83**	-.11

Table 4:12 (continued)

Correlations between Impulse Control and Self-Sufficiency

IMPULSE CONTROL

	Conformity PNI (Raw)	Attentvnss PNI (Res)	Impulsivity PNI (Res)	Social Inhbtn PNI (Res)	Conformity PNI (Res)	Impulse Control Fa-(2)	Impulse Control Mo-(2)	Distraction Diff. Correct	Distraction Error Incrs	Avoidance of Failure
SELF-SUFF.	169	157	161	164	159	211	251	149	152	51
[43]	.14	-.10	-.06	-.01	.05	.31*	.42**	-.10	.15	-.22
[44]	.31*	-.07	-.21	.11	.07	.32*	.47**	-.17	-.27*	-.30*
[208]	.14	.04	-.01	-.07	-.12	.47**	.38**	-.01	-.01	-.12
[209]	.04	-.01	.01	-.10	-.21	.34**	.29*	.02	.01	-.09
[210]	.24*	.10	-.03	-.01	.06	.45**	.38**	-.05	-.02	-.09
[248]	.22*	.00	-.10	-.05	-.01	.40**	.54**	-.19	-.14	-.07
[249]	.07	.02	-.04	-.07	-.14	.27*	.28*	-.03	-.10	.06
[250]	.22*	-.01	-.08	-.03	.13	.31**	.48**	-.27*	-.12	-.19
[88]	.20	-.23	.33**	-.35**	-.31**	.21	.28*	.01	.03	-.15
[98]	.48**	.04	.06	-.02	-.02	.26*	.23*	-.09	-.23*	-.03
[109]	.60**	.02	.08	-.08	-.03	.35**	.31**	-.05	-.12	-.06
[162]	.14	.34	-.62**	.33**	.39**	.00	.07	.03	.20	-.15
[172]	-.70**	.01	.03	-.01	-.10	-.22	-.24*	.10	.35**	.07

* p < .05

** p < .01

Table 4:13. Correlations between Self-Sufficiency and Social Adjustment

SOCIAL ADJUSTMENT

	Popularity TR (2)	Popularity PNI (Res)	Popularity PNI (Raw)	Social Virtues TR (K)	Social Virtues TR (1)	Social Virtues TR (2)
SELF-SUFFICIENCY	108	160	170	86	92	100
43 Child Bhvr. Des.-Mo.	.26	-.05	.16	.22*	.11	.20
44 Child Bhvr. Des.-Fa.	.55	.03	.39*	.22	.31**	.46**
208 Self-Suf.-Fa. Rep.-2nd	.29	-.05	.21	.05	.12	.26*
209 Mastery-Fa. Rep.-2nd	.25*	-.04	.12	.00	.05	.22
210 Conformity-Fa. Rep.-2nd	.24	-.02	.26*	.11	.16	.21
248 Self-Suf.-Mo. Rep.-2nd	.27	.18	.35**	.06	.14	.20
249 Mastery-Mo. Rep.-2nd	.21	.16	.24*	-.09	.08	.06
250 Conformity-Mo. Rep.-2nd	.15	.11	.28*	.16	.09	.18
88 Maturity-TR (K)	.25	.09	.31**	.43**	.25**	.12
98 Maturity-TR (1)	.49	-.27**	.41**	.27*	.65**	.51**
109 Self-Suf.-TR (2)	.54	-.26**	.51**	.20*	.31**	.49**
162 Help-Seeking PNI (Res)	-.03	-.04	.03	-.02	.10	.01
172 Help-Seeking PNI (Raw)	-.45**	.25**	-.49**	-.33**	-.42**	-.55**

* $p < .05$

** $p < .01$

Table 4:14. Correlations of Mastery and Impulse Control Variables

	IMPULSE CONTROL							
	Attentiveness IQ Rater	Persistence IQ Rater	Poor Self-Control TR (2)	Avoidance of Failure TR (2)	Persistence TR (2)	Attentiveness PNI (Raw)	Impulsivity PNI (Raw)	Social Inhbtn PNI (Raw)
MASTERY	24	26	101	104	106	167	171	174
205 Mastery-Fa. Rep.-2nd	.17	.09	-.08	-.09	.17	.26*	-.13	.02
245 Mastery-Mo. Rep.-2nd	.15	.12	-.11	-.35**	.24*	.16	-.14	-.02
84 Readiness for 1-TR (K)	.17	.30**	-.10	-.19	.36**	.22*	-.05	-.03
95 Readiness for 1-TR (1)	.36**	.23*	-.26*	-.36**	.52**	.50**	-.30**	.13
85 Constructive Play-TR (K)	.23*	.29**	-.18	-.20	.33**	.22*	-.33**	-.02
97 Constructive Play-TR (1)	.16	.11	-.35**	-.27*	.42**	.40**	-.28**	.15
89 Physical Ability TR (K)	.08	.14	-.04	-.30**	.27*	.20	-.03	-.14
94 Physical Ability TR (1)	.26*	.09	-.10	-.12	.00	.10	-.03	-.16
102 Physical Ability TR (2)	.23*	.12	-.17	-.50**	.35**	.26**	-.08	-.12
175 Self Confidence-PNI (Raw)	.08	.03	-.39**	-.40**	.57**	.76**	-.45**	.32**
176 Curiosity-PNI (Raw)	.08	.03	-.21	-.17	.34**	.44**	-.02	.26*
48 Masculinity-Wright's Mas.	.00	.09	.04	-.11	.03	-.03	-.01	-.08
29 Masculinity-IQ Rating	.12	.08	.06	-.14	.08	-.10	.17	-.05
93 Masculinity-TR (1)	.28**	.19	.09	-.18	-.08	-.12	.23*	-.28**
103 Masculinity-TR (2)	.29**	.19*	-.34**	-.43**	.47**	.38**	-.23*	-.02

Table 4:14 (continued)

Correlations of Mastery and Impulse Control Variables

IMPULSE CONTROL

	Conformity PNI (Raw)	Attentvnss PNI (Res)	Impulsivity PNI (Res)	Social Inhbtn PNI (Res)	Conformity PNI (Res)	Impls Cntrl Fa.Rep. (2)	Impls Cntrl Mo.Rp. (2)	Distraction Diff. Corr.	Distraction Error Incrs	Avoidance of Failure Exp.
MASTERY	169	157	161	164	159	211	251	149	152	51
[205]	.28*	.11	-.02	-.04	.23	.27*	.31**	.10	.05	.05
[245]	.13	-.02	-.06	-.07	-.12	.08	.15	.06	-.04	.14
[84]	.25*	-.16	.24*	-.19	-.28*	.31**	.29*	-.01	-.12	-.15
[95]	.50**	.03	.16	-.14	-.09	.29*	.35**	.05	-.17	-.04
[85]	.24*	-.12	.18	-.15	-.13	.20	.35**	-.04	.00	-.18
[97]	.38**	.04	.06	-.01	-.12	.12	.10	.13	-.08	.03
[89]	.26*	-.22*	.19	-.31**	-.19	.00	.00	.06	.01	-.08
[94]	.11	-.13	.28*	-.29**	-.19	-.04	.04	.20	-.21	.02
[102]	.30**	-.22*	.28**	-.33**	-.26	.06	.08	-.03	-.11	.05
[175]	.78**	.03	-.14	.00	.04	.15	.14	.03	-.05	-.13
[176]	.51**	-.08	-.01	-.06	-.06	.13	.19	.07	.06	-.10
[48]	-.01	-.15	.24	-.17	-.25	.03	.21	.00	.20	.06
[29]	-.05	-.28**	.27**	-.21*	-.28**	-.03	-.01	-.05	-.08	-.04
[93]	-.06	-.30**	.35**	-.41**	-.26*	-.20	-.04	-.20*	-.03	-.02
[103]	.39**	-.09	.10	-.23*	-.22*	.26*	.27*	-.18	-.08	-.07

* $p < .05$

** $p < .01$

Table 4:15. Correlations of Social Adjustment and Mastery Variables

SOCIAL ADJUSTMENT

	Popularity TR (2)	Popularity PNI (Res)	Popularity PNI (Raw)	Social Virtue TR (K)	Social Virtue TR (1)	Social Virtue TR (2)
MASTERY	108	160	170	86	92	100
205 Mastery-Fa.Rep. 2nd	-.08	-.17	.20	.14	.20	.01
245 Mastery-Mo.Rep. 2nd	.27**	.28**	.27**	.19	.25*	.09
84 Readiness for 1 - TR (K)	.23*	-.12	.27**	.40**	.29**	.21*
95 Readiness for 1 - TR (1)	.45**	-.19	.47**	.17	.40**	.30**
85 Constructive Play - TR (K)	.13	-.01	.29**	.38**	.13	.20
97 Constructive Play - TR (1)	.37**	-.18	.37**	.24*	.52**	.36**
89 Physical Ability TR (K)	.34**	.16	.42**	.28**	.28**	.13
94 Physical Ability TR (1)	.40**	.29**	.28**	.13	.28**	.15
102 Physical Ability TR (2)	.58**	.21*	.49**	.18	.25*	.30**
175 Self confidence PNI (Raw)	.46**	-.28**	.76**	.27**	.38**	.48**
176 Curiosity PNI (Raw)	.38**	-.10	.66**	.04	.28**	.26**
48 Masculinity-Wright's	.20	.05	.01	-.13	.11	.03
29 Masculinity - IQ Rating	.20*	.16	.13	.26*	.15	.13
93 Masculinity-TR (1)	.27**	.37**	.18	.03	-.03	-.04
102 Masculinity-TR (2)	.64**	.03	.47**	.24*	.30**	.36**

* $p < .05$

** $p < .01$

Table 4:16 Correlations of Impulse Control and Social Adjustment

SOCIAL ADJUSTMENT

	Popularity TR (2)	Popularity PNI (Res)	Popularity PNI (Raw)	Social Virtues TR (K)	Social Virtues TR (1)	Social Virtues TR (2)
IMPULSE CONTROL	108	160	170	86	92	100
24 Attentiveness-IQ rater	.18	-.11	.14	.05	.28**	.20*
26 Persistence-IQ rater	.06	-.03	.04	.19	.12	.02
101 Poor Self-Control-TR (2)	-.44**	.28**	-.38**	-.20	-.56**	-.58**
104 Avoidance of Failure-TR (2)	-.49**	.01	-.37**	-.08	-.26*	-.35**
106 Persistence-TR (2)	.55**	-.33**	.53**	.33**	.51**	.60**
167 Attentiveness-PNI (Raw)	.51**	-.36**	.77**	.28**	.54**	.63**
171 Impulsivity-PNI (Raw)	-.45**	.31**	-.41**	-.33**	-.53**	-.62**
174 Social Inhibition PNI (Raw)	.10	-.41**	.23*	.07	.28**	.36**
169 Conformity-PNI (Raw)	.54**	-.33**	.84**	.29**	.53**	.61**
157 Attentiveness-PNI (Res)	-.11	-.27**	-.04	-.16	.13	.14
161 Impulsivity-PNI (Res)	.00	.28**	-.05	-.04	-.21*	-.27**
164 Social Inhibition PNI (Res)	-.13	-.34**	-.10	.02	.15	.19*
159 Conformity-PNI (Res)	-.07	-.32**	.06	.04	.22*	.10
211 Impulse Control Fa. Rep.-2nd	.24	-.29*	.25*	.15	.21	.25*
251 Impulse Control Mo. Rep.-2nd	.31**	-.06	.28*	.32**	.23*	.31**
149 Distraction-Diff. Correct	-.10	-.07	-.06	-.05	-.12	-.08
152 Distraction-Error Increase	-.11	.06	-.10	-.07	-.15	-.22*
51 Avoidance of Failure-Exp.	-.10	.11	-.09	-.15	-.06	-.19

* $p < .05$
** $p < .01$

Help-seeking scale. We have already commented (see Chapter III) on the changes introduced in the interrelationships of the PNI scales by the partialling procedure by which these residual scales were constructed. That this negative relationship is not entirely artifactual, however, is attested by the positive correlations of the "impulsivity" scales with the kindergarten teachers' ratings of readiness, self-sufficiency and physical ability, and the ratings on masculinity. The residual conformity and social inhibition scales which seem to represent the opposite end of the activity-passivity dimension (discussed in Chapter III) are also negative with teachers' ratings of self-sufficiency, readiness, masculinity and physical ability. The residual attentiveness scale is also positively correlated with help-seeking and negative with masculinity. (Some of the "attentiveness" items seem to imply relating to the teacher in a dependent way.) This general pattern of correlations seems to suggest that the residual peer rating scales which reflect a generally passive orientation are negatively related to self-sufficiency, mastery and masculinity, as judged by teachers as well as by peers. It is thus difficult to predict what the relationships of these particular measures of impulse-control will be to achievement and to parent attitudes, since the residual "Impulsivity" scale seems to reflect an assertive, outgoing orientation which may well be related positively to some aspects of achievement, and to parental warmth and permissiveness.

3. RELATIONSHIPS BETWEEN CHILD PERSONALITY AND ABILITY AND ACHIEVEMENT

a. Ability and Achievement Related to Self-Sufficiency:

Originally, we made the following predictions:

Hypothesis 11. The measures of self-sufficiency will be directly related to the measures of second grade achievement. The more self-sufficient the child, the better will be his school achievement.

Hypothesis 12. Self-sufficiency will be more highly related to numerical than verbal achievement.

These hypotheses assume that self-sufficiency is a global construct. However, in light of the preceding discussion, it would seem appropriate to make some discrimination among ratings of self-sufficiency from different sources and obtained at different times. We also wish to expand our hypotheses to take into account the relation of ability to self-sufficiency. Therefore we further predict that:

1. The measures of self-sufficiency will be more highly related to the measures of achievement than they will be to the measures of ability.
2. One might expect higher correlations among current measures of second grade self-sufficiency and achievement than between kindergarten measures of self-sufficiency and second-grade achievement.

3. One might expect higher correlations between teacher- and peer-ratings of self-sufficiency with academic achievement and ability than between parent ratings of self-sufficiency and academic achievement and ability.

The data relevant to these predictions are presented in Table 4.17. The findings may be described as follows:

1. The teachers' ratings of self sufficiency (vars. 88, 98, 109) were positively correlated with all of the measures of ability and achievement. In almost every case these correlations were significant at the .01 level.[1]

2. The highest of the correlations were between Teachers' Ratings of self-sufficiency and achievement reputation (i.e., teacher and peer ratings of academic achievement). (This might be accounted for by the halo effect operating in the teachers' ratings, and by the effect which teachers' opinions had on the students in their classes.)

3. As predicted, in general the teachers' ratings of self-sufficiency were more highly correlated with measures of achievement than they were with the measures of ability.

4. Among the measures of ability, the teacher-ratings of self-sufficiency were most highly correlated with the PMA number subtest, followed by the WISC Verbal Scale score. It may be remembered that the PMA number subtest is by far the best predictor of academic achievement

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[1] Significance levels are given for 2-tail tests, although in most cases the use of a 1-tail test would be legitimate.

Table 4:17 Correlations of Ability and Achievement with Self-Sufficiency

	SELF-SUFFICIENCY							
	Child Bhvr Dscrp. Mo(K&1)	Child Bhvr Dscrp. Fa(K&1)	Self-Suff. Fa.Rep. (2nd)	Mastery Fa.Rep. (2nd)	Conformity Fa. Rep. (2nd)	Self-Suff. Mo. Rep. (2nd)	Mastery Mo. Rep. (2nd)	Conformity Mo. Rep. (2nd)
ABILITY-ACHIEVEMENT	43	44	208	209	210	248	249	250
2 WISC-Verbal	.09	.10	.04	.06	.01	.01	.01	-.06
3 WISC-Perform.	-.15	.01	-.06	-.06	-.04	.01	.03	.01
4 WISC-Full	-.01	.05	.00	.01	-.01	.04	.05	-.01
38 PMA-Verbal	-.06	-.03	-.14	-.09	-.16	-.02	-.02	-.03
39 PMA-Space	-.04	-.20	-.03	.02	-.12	-.02	-.05	.08
40 PMA-Number	.20	.40**	.12	.11	.08	.21	.10	.16
41 PMA-Perceptual	.08	-.01	.06	.01	.10	.13	-.04	.27*
42 PMA-Total	.07	.06	.04	.05	.02	.15	.03	.18
31 Primary Word Reading-1	.12	.26	.28*	.22	.24	.19	.19	.14
32 Primary Sentence Reading-1	.29*	.24	.24	.17	.23	.11	.08	.14
33 Primary Paragraph Rdng.-1	.09	.22	.26*	.23	.18	.18	.18	.12
36 Reading Achievement (AWR) 2	.15	.29	.24	.19	.21	.20	.12	.24*
37 Reading Achievement (APR) 2	.14	.23	.21	.12	.25*	.18	.03	.27*
34 CAT-Reasoning-2	.22	.23	.24	.13	.32**	.24*	.14	.20
35 CAT-Fundamentals-2	.17	.27	.42**	.33**	.38**	.28*	.18	.27*
99 Reading Achievement-TR (2)	.10	.40**	.27*	.16	.33**	.21	.08	.22*
105 Number Achievement-TR (2)	.23*	.34*	.38**	.34**	.27*	.18	.13	.15
158 Acad. Achievement-PNI (Res)	.06	.18	.22	.24*	.07	-.07	-.01	-.11
168 Acad. Achievement-PNI (Raw)	.16	.38*	.24	.16	.26*	.22*	.12	.17

Table 4:17 (continued)

Correlations of Ability and Achievement with Self Sufficiency

SELF SUFFICIENCY

	Maturity TR (K)	Maturity TR (1)	Self Sufficiency TR (2)	Help-Seeking PNI (Res)	Help Seeking PNI (Raw)
ABILITY-ACHIEVEMENT	88	98	109	162	172
[2]	.42**	.37**	.36**	-.07	-.25**
[3]	.20	.21*	.21*	-.14	-.17
[4]	.38**	.34**	.34**	-.13	-.25**
[38]	.39**	.22*	.28**	-.14	-.41**
[39]	.23*	.16	.17	-.30**	-.17
[40]	.34**	.53**	.52**	-.22*	-.39**
[41]	.23*	.24*	.27**	-.22*	-.21*
[42]	.37**	.42**	.42**	-.28**	-.40**
[31]	.46**	.40**	.54**	-.29**	-.44**
[32]	.36**	.37**	.55**	-.24*	-.46**
[33]	.39**	.39**	.52**	-.29**	-.44**
[36]	.44**	.47**	.54**	-.36**	-.58**
[37]	.37**	.37**	.41**	-.30**	-.49**
[34]	.34**	.51**	.52**	-.20*	-.36**
[35]	.23*	.48**	.48**	-.09	-.32**
[99]	.24*	.43**	.62**	-.28**	-.58**
[105]	.42**	.51**	.73**	-.33**	-.58**
[158]	.26*	.24*	.30**	-.40**	-.19*
[168]	.33**	.56**	.69**	.00	-.70**

* $p < .05$

** $p < .01$

in first and second grades of all the ability measures, and that the next best predictor is the WISC Vocabulary subscale score.

5. Teachers' ratings of self-sufficiency were no more highly correlated with measures of numerical achievement than they were with measures of reading achievement. Thus our second hypothesis (12) was not confirmed.

6. As one would expect, the second grade teacher-ratings of self-sufficiency were more highly correlated with the measures of achievement than the first grade ratings, which in turn were more highly correlated with achievement than the kindergarten ratings. However, the differences in degree of correlations were not very great and it would appear that kindergarten teachers' ratings of self-sufficiency are moderately good predictors of verbal (though not of numerical) achievement in first and second grade.

7. The peer-rating measures of Help-Seeking were negatively correlated with all of the measures of ability and achievement, as predicted. The raw-score measure is, in most cases, more highly correlated than the residual scale. It must be remembered that the raw-score scale confounds variance associated with general negative social reputation with that specifically attributable to help-seeking behavior (low self-sufficiency).

8. As with the Teachers' Ratings of Self- Sufficiency, the highest of the correlations for the PNI scales were with measures of achievement reputation (teacher and peer ratings of academic achievement). All of the correlations between PNI raw score measures of self-sufficiency and academic achievement were significant at the .01 level, 2-tail (except

PNI residual Academic Achievement, significant at .05 level, 2-tail).

9. As predicted, the PNI measures of self-sufficiency were more highly correlated with measures of achievement than they were with the measures of ability. All of the correlations between measures of academic achievement and PNI Help-Seeking were significant at less than .01 level, 2-tail test, the correlations ranging from -.32 to -.58. (There are also significant correlations ranging from -.25 to -.43 for the Passive Dependency scale.) All but one of the measures of achievement were correlated significantly (.01 or .05 level) with the residual PNI Help-seeking scale.

10. Among the measures of ability, the highest correlations were with both PMA verbal and numerical subscales, followed by WISC Verbal subscale.

11. Contrary to our prediction, PNI ratings of Self-sufficiency were more highly correlated with measures of verbal (i.e., reading) achievement than they were with measures of numerical achievement.

12. The parents' ratings of Self-sufficiency were not nearly as highly correlated with ability and academic achievement as were the Teachers' and Peer Ratings of self-sufficiency. This is not surprising since the Teachers' ratings and PNI scales were measuring self-sufficiency in the school setting, and particularly in relation to academic tasks, while the parents' ratings were of the child's behavior outside of the school setting and in relation to a number of areas of behavior aside from academic achievement.

13. All of the parents' ratings of self-sufficiency were positively

correlated with all of the measures of achievement and with the TR and PNI raw-score measures of achievement reputation.

14. Only two of the correlations between parents' ratings of self-sufficiency and the ability variables were significant. (These were 44 r 40, .40, $p < .05$ 2 tail, and 250 r 41: .27, $p < .05$ 2 tail.) Surprisingly, some of the parents' ratings of self-sufficiency were negatively correlated with some of the measures of ability. None of these negative correlations are significant.

15. The parents' ratings of self-sufficient conformity tend to correlate somewhat higher with academic achievement than parents' ratings of self-sufficient mastery.

16. The fathers' ratings of self-sufficiency were somewhat more highly correlated with numerical than with verbal achievement, as predicted, but this did not hold true for mothers' ratings of self-sufficiency.

17. There were fewer significant correlations between parents' ratings of self-sufficiency at kindergarten age, and first and second grade achievement than there were between achievement and the parents' ratings of self-sufficiency at the second grade level. The correlations of kindergarten parents' ratings of self-sufficiency with ability and achievement were somewhat higher for fathers than for mothers, perhaps because the father scale is in general more highly correlated with the later measures of self-sufficiency, including teachers' and peers' ratings at second grade.

In summary, the first of our two original hypotheses and our three

Table 4:18 Correlations of Ability and Achievement with Mastery

MASTERY

	Mastery Fa. Rep. (2)	Mastery Mo. Rep. (2)	Readi-nss for 1-TR(K)	Readi-nss for 1-TR(1)	Cnstrctv Play TR (K)	Cnstrctv Play TR (1)	Physcl. Ability TR (K)	Physcl. Ability TR (1)
ABILITY-ACHIEVEMENT	205	245	84	95	85	97	89	94
2 WISC-Verbal	.08	.14	.54**	.43**	.18	.18	.20	.01
3 WISC-Perform.	.34**	-.01	.35**	.36**	.22*	.15	.15	-.05
4 WISC-Full Scale	.29*	-.09	.55**	.48**	.27**	.17	.22*	-.05
38 PMA-Verbal	.27*	-.04	.45**	.32**	.24*	.21*	.28**	.03
39 PMA-Space	.24*	.05	.32**	.20*	.31**	.10	.09	-.19
40 PMA-Number	.09	.10	.45**	.61**	.21*	.38**	.24*	.14
41 PMA-Prcptl.	.08	.02	.27**	.37**	.23*	.08	.07	.01
42 PMA-Total	.18	.04	.45**	.52**	.29**	.24*	.20	.01
31 Primary Word Reading-1	.15	.03	.49**	.65**	.38**	.51**	.34**	.18
32 Primary Sentence Reading-L	.16	.02	.49**	.58**	.44**	.45**	.27**	.05
33 Primary Paragraph Reading-1	.14	.04	.50**	.60**	.37**	.40**	.31**	.11
36 Rdg. Achvmnt. (AWR)-2	.21	.04	.51**	.64**	.35**	.47**	.30**	.12
37 Rdg. Achvmnt. (APR)-2	.21	.01	.48**	.53**	.34**	.38**	.24*	.12
34 CAT-Reasoning 2	.14	.22*	.41**	.57**	.28**	.51**	.21*	.12
35 CAT-Fundamentals-2	.05	.17	.33**	.50**	.34**	.42**	.10	.11
99 Rdg. Achvmnt. TR (2)	.18	.10	.34**	.52**	.30**	.38**	.18	.10
105 Number Achvmt. TR (2)	.10	.17	.44**	.61**	.35**	.51**	.35**	.13
158 Acad. Achvmnt. PNI (Res)	-.08	-.08	.39**	.26*	.15	.18	.13	-.04
168 Acad. Achvmnt. PNI (Raw)	.22	.16	.40**	.59**	.31**	.46**	.34**	.15

Table 4:18 (continued)

Correlations of Ability and Achievement with Mastery

MASTERY

ABILITY-ACHIEVEMENT	Physical Ability TR (2) 102	Self-Confdnc PNI(Raw) 175	Curi-osity PNI(Raw) 176	Mascu-linity Wright 48	Mascu-linity IQ Rater 29	Mascu-linity TR (1) 93	Mascu-linity TR (2) 103
[2]	.29**	.44**	.33**	.16	.19*	-.08	.35**
[3]	.11	.23*	.10	.00	.05	-.08	.12
[4]	.24*	.40**	.25*	.08	.14	-.10	.29**
[38]	.18	.23*	.04	.26	.09	-.13	.20*
[39]	.09	.05	.09	.11	.01	-.22*	.12
[40]	.41**	.43**	.23*	.13	.13	.04	.50**
[41]	.12	.01	.00	.12	.00	.02	.15
[42]	.29**	.26**	.11	.19	.07	-.03	.35**
[31]	.30**	.44**	.28**	.23	.17	-.04	.40**
[32]	.23*	.43**	.32**	.17	.11	-.03	.38**
[33]	.32**	.38**	.26**	.14	.11	.01	.40**
[36]	.33**	.44**	.26**	.16	.18	-.06	.38**
[37]	.20*	.38**	.23*	.21	.15	-.11	.27**
[34]	.42**	.30**	.29**	.25	.06	.04	.44**
[35]	.29**	.26*	.23*	.16	.06	.01	.32**
[99]	.31**	.53**	.39**	.05	.07	-.07	.35**
[105]	.52**	.55**	.32**	.06	.20**	-.02	.51**
[158]	.14	.09	-.01	.19	.16	-.01	.23*
[168]	.41**	.81**	.56**	.04	.05	.00	.49**

* < .05

** < .01

supplementary ones were all confirmed. Our second original hypothesis was not--there is no tendency for any of the measures of self-sufficiency except fathers' reports to be more highly correlated with numerical than verbal achievement. (This finding is too tenuous to interpret, but one might speculate, as suggested earlier, that fathers' judgments of self-sufficiency are based to a greater extent on spontaneous "mastery" behavior, and it is this aspect of self-sufficiency which particularly facilitates numerical achievement.) The highest correlations seem to be with measures of reading skills. Self-sufficiency correlates positively with all measures of achievement and ability, generally more highly with the former, as predicted. Also as predicted, there is a general tendency for higher correlations for measures of self-sufficiency derived from the classroom situation and collected contemporaneously with the ability and achievement tests.

b. Ability and Achievement Related to Mastery

We saw earlier that the measures of mastery are not as clearly interrelated as those of self-sufficiency. Similarly, the relationships of these measures of mastery to ability and achievement at the first and second-grade levels do not present a consistent picture. From the results of our study, we cannot say, as we predicted in hypothesis 13 of our proposal, that on the whole, measures of mastery are directly related to measures of second grade achievement (or ability).

1. Parent Ratings of Mastery. The SPQ questionnaire measures of their sons' mastery were very poor predictors of ability or achievement. There was only one significant correlation between the mothers' ratings

of mastery and measures of ability or achievement. This was with the measure of arithmetic reasoning (correlation .22, .05 2 tail). For the fathers, there were two interesting significant relationships: the rating of mastery with the WISC Performance Subtest score, and the PMA Space subtest score. None of the other measures of mastery showed significant relationships with these subtest scores, and it is difficult to explain the meaning of these findings. There were also moderately significant correlations of fathers' ratings of mastery with the Verbal PMA and verbal achievement scores at the second grade level, and with PNI raw score achievement reputation. Again, the correlations of these parent scales with other variables were probably limited by their low reliability.

2. PNI Residual Scores. The raw-score peer-ratings of Self-Confidence and Curiosity are positively related to all of the achievement variables and some of the ability measures. These variables, however, include a good deal of variance attributable to general positive reputation. No relationships were found for the residual scores, but it must be remembered that each one was based on only one item.

3. Measures of Masculinity. The Wright measure of masculine role choice showed three significant relationships (less than .05 level, 1-tail test) with PMA Verbal, Primary Word Reading, and Arithmetic Reasoning. The kindergarten and first grade teachers' ratings of masculinity were unrelated to the measures of ability and achievement (except for the one negative relationship of first grade teachers' ratings of masculinity with PMA space subtest, a stray finding which resembles those of

Maccoby and Rau, 1962, with older children). Thus, there is only slight evidence for a relationship between masculinity and achievement.

The second grade teachers' ratings of masculinity, however, are significantly related to all the measures of achievement, and are also significantly related to the WISC Verbal and Full Scale scores and the PMA Verbal, Number and Total scores. Apparently, the second grade teachers' ratings of masculinity fall into the same classification as the other teachers' ratings of positively valued characteristics--and we find similar results for this measure and the other teachers' ratings: the high correlations with measures of achievement, achievement reputation, and with the WISC Verbal and PMA Number subtests. It is unclear from these findings, however, whether masculinity, per se, is related to achievement and ability. As we saw earlier, our various measures of masculinity were not very highly intercorrelated. For the most part the measures of masculinity did not relate significantly to the measures of ability, achievement or achievement reputation. The one measure of masculinity which did probably is not a very clear-cut measure of masculinity, but rather reflects the halo effect of the teachers' ratings at second grade level.

4. Other Measures of Mastery. For the most part, the other measures of mastery were related to the measures of ability and achievement in the predicted direction. These included the teachers' ratings of constructive play in kindergarten and first-grade, kindergarten and second-grade teachers' ratings of physical ability, and peer ratings (raw score) of self-confidence and curiosity. The one exception to this was the first

grade teachers' ratings of physical ability which, though they were significantly and moderately highly related to the kindergarten and second grade teachers' ratings of physical ability, did not relate to ability and achievement.

As was the case with the other personality variables we have considered so far, we can conclude that these measures of mastery were significantly related to all of the measures of achievement and achievement reputation. Among the measures of ability, they were most highly related to the WISC verbal subtest score and the PMA number subtest score, and to a lesser extent with PMA verbal subtest score. There did not seem to be a great difference in the relationship of these measures of mastery to verbal as opposed to numerical achievement. However, the measure of CAT Arithmetic reasoning was more highly related to mastery than was the measure of CAT Arithmetic fundamentals.

In conclusion--"Mastery" as we used it was a global concept, and some of our measures of mastery did not seem to relate in the predicted direction with the measures of ability, achievement and achievement reputation. On the other hand, those measures of mastery which did relate in the predicted direction, related similarly to the other measures of personality which have been considered in this study.

c. Ability and Achievement Related to Impulse Control

We proposed the following general hypothesis in this area:

> Hypothesis lb: The measures of impulse control will be directly related to the measures of second grade achievement. The more impulse control displayed by the child, the better will be his school achievement in second grade.

Table 4:19 Correlations of Ability and Achievement with Impulse Control

	IMPULSE CONTROL							
	Attentiveness IQ Rater	Persistence IQ Rater	Poor Self-Control TR (2)	Avoidance of Failure TR (2)	Persistence TR (2)	Attentiveness PNI (Raw)	Impulsivity PNI (Raw)	Social Inhbtn PNI (Raw)
ABILITY-ACHIEVEMENT	24	26	101	104	106	167	171	174
2 WISC-Verbal	.21*	.13	-.20*	-.32**	.31**	.32**	-.13	.10
3 WISC-Perform.	.19*	.35**	-.01	-.27**	.19*	.27**	-.07	.08
4 WISC-Full Scale	.24*	.30**	-.11	-.35**	.30**	.36**	-.12	.11
38 PMA-Verbal	.16	.15	-.06	-.14	.16	.31**	-.29**	-.05
39 PMA-Space	.16	.27**	-.03	-.17	.13	.07	.00	-.12
40 PMA-Number	.28**	.14	-.25*	-.40**	.46**	.42**	-.28**	-.01
41 PMA-Perceptual	.18	.32**	.06	-.16	.13	.09	-.05	-.25*
42 PMA-Total	.28**	.29**	-.09	-.30**	.31**	.31**	-.22*	-.13
31 Primary Word Reading-1	.19	.08	-.23*	-.26*	.45**	.45**	-.32**	.07
32 Primary Sentence Reading-1	.23*	.09	-.27**	-.27**	.51**	.47**	-.36**	.06
33 Primary Paragraph Read.-1	.30**	.12	-.30**	-.40**	.43**	.44**	-.32**	.09
36 Reading Ach. (AWR)-2	.30**	.12	-.27**	-.29**	.47**	.52**	-.41**	.06
37 Reading Ach. (ASR)-2	.20*	.09	-.23*	-.16	.36**	.44**	-.36**	-.02
34 CAT-Reasoning-2	.17	.11	-.30**	-.42**	.47**	.37**	-.28**	.03
35 CAT-Fundamentals-2	.16	.08	-.40**	-.26**	.48**	.41**	-.29**	.13
99 Reading Ach. TR (2)	.14	.03	-.29**	-.25*	.53**	.57**	-.46**	.14
105 Number Ach. TR (2)	.16	.04	-.29**	-.43**	.64**	.55**	-.39**	.04
158 Acad. Ach. PNI (Res)	.10	.00	.05	-.06	.20*	-.02	.06	-.19
168 Acad. Ach. PNI (Raw)	.23*	.06	-.52**	-.39**	.72**	.89**	-.63**	.30**

Table 4:19 (continued)

Correlations of Ability and Achievement in Impulse Control

IMPULSE CONTROL

	Conformity PNI (Raw)	Attentvnss PNI (Res)	Impulsivity PNI (Res)	Social Inhbtn PNI (Res)	Conformity PNI (Res)	Implse Control Fa.Rep. (2)	Implse Cntrol Mo.Rep. (2)	Distractn. Diff. Corr.	Distractn. Error Incrs.	Avoidance of Failure
ABILITY-ACHIEVEMENT	169	157	161	164	159	211	251	149	152	51
[2]	.35**	-.10	.13	-.16	-.22*	.17	.20	.19*	-.08	-.03
[3]	.23*	.29**	.02	-.06	-.04	.15	.11	.12	-.09	-.14
[4]	.35**	.13	.08	-.13	-.15	.22	.21	.19*	-.09	-.12
[39]	.30**	-.04	.10	-.12	-.08	.06	.05	.07	-.09	-.13
[39]	.07	-.03	.22*	-.13	-.17	.20	.08	.12	.04	-.09
[40]	.37**	.06	.10	-.22*	-.21*	.34**	.22*	-.01	-.17	.03
[41]	.12	-.07	.31**	-.37**	-.07	.17	.20	-.11	-.16	-.15
[42]	.29**	.00	.22*	-.29**	-.20*	.27*	.19	.02	-.15	-.09
[31]	.43**	.08	.16	-.11	-.20*	.37**	.18	.13	-.14	.00
[32]	.44**	.04	.12	-.12	-.18	.35**	.22*	.04	-.15	-.01
[33]	.42**	.08	.14	-.11	-.18	.40**	.19	.11	-.16	.04
[36]	.46**	.08	.10	-.09	-.20*	.30*	.11	.04	-.28**	.02
[37]	.41**	.05	.16	-.15	-.18	.24*	.18	-.06	-.27**	.05
[34]	.36**	-.01	.10	-.12	-.19	.29*	.17	.04	-.10	-.04
[35]	.36**	.19	-.01	-.01	-.06	.34**	.38**	.01	-.14	-.03
[00]	.59**	-.08	.10	-.07	-.08	.29*	.27*	-.04	-.27**	.01
[105]	.56**	-.09	.17	-.17	-.14	.27*	.20	.06	-.22*	-.04
[158]	.00	-.33**	.39**	-.29**	-.43**	.15	-.06	-.03	-.14	.05
[168]	.92**	.01	.09	-.01	.07	.38**	.29**	-.07	-.19	-.13

* $p < .05$

** $p < .01$

With our expanded interest in exploring the effects of personality variables on both ability and achievement instead of on achievement alone, as was our original intention, we would add a further specification to the above hypothesis:

> If tests of ability such as the Wechsler and PMA are measuring inherent capabilities, or general rather than specific learning, then we would expect these tests to be less affected by (i.e., less highly correlated with) personality variables such as impulse control than tests of achievement, which measure more recently learned academic skills.

This is certainly the assumption made whenever a clinical psychologist does an intellectual evaluation of a child who is achieving poorly in school.

It may be recalled from the earlier discussion about the interrelationships among our measures of impulse control that the measures of impulse control obtained from a particular setting (i.e., home, classroom, individual test session, etc.) were more highly interrelated with one another than were measures obtained from different settings. Bearing this in mind, we will discuss our results separately for the measures of impulse control obtained in the different settings. The ratings obtained in the individual intelligence test setting include variable 24: IQ testers' ratings of attentiveness, and variable 26: IQ ratings of persistence. The ratings obtained in the classroom include second grade Teachers' ratings of impulse control (variables 101: Poor Self-Control, and 106: Persistence). They also include second-grade peer-ratings of impulse control (Raw score and residual score ratings of Attentiveness: variables 167 and 157, Impulsivity: 171 and 161, Social

Inhibition: 174 and 164 and Conformity: 169 and 159. Parents' ratings of impulse control in the home include reports obtained from fathers (variable 211) and mothers (variable 251). Finally, we have the experimental measures of resistance to distraction (variables 149 and 152) and avoidance of failure.

In discussing our findings in relation to each of these sets of measures, we will also attempt to explore the possibility that we may get different findings for different subconstructs of impulse control (attentiveness vs persistence, etc.), or for the variables phrased in negative terms (such as impulsivity or avoidance of failure) as opposed to those phrased in positive terms (such as attentiveness and persistence).

If we now consider the child's ability to control his impulses as related to the setting in which he finds himself, then it would also seem to follow that if a particular setting is distracting to a boy, his achievement will be poorest in that setting. Thus, if a child's main difficulty with impulse control occurs in the classroom, this child should have more difficulty with achievement than a child whose main difficulty with impulse control occurs at home. In other words, we would expect the measures of impulse control at school to be more highly correlated with measures of achievement than the measures of the parents' judgments of their sons' impulse control at home. (There may be some circularity to this idea, as it is probably the case that the teachers' and peer ratings of impulsivity are affected by the child's actual school achievement and vice versa. Even though the measures of the two variables were obtained independently, we can assume that teachers and pupils have a fair idea of how academically astute their second-grade students and peers are.)

The results are as follows:

1. As predicted, the intelligence testers' ratings of impulse control (both attentiveness and persistence) correlate positively with all the measures of ability and achievement.

2. Although the intelligence testers' ratings of attentiveness (variable 24) and persistence (variable 26) were moderately highly correlated with one another (r was .46), and by far more highly correlated with one another than with the other measures of impulse control, these two subconstructs of impulse control seemed to relate differentially to second-grade boys' ability and achievement. The intelligence testers' ratings of persistence correlated more highly with measures of ability than they did with measures of achievement. On the other hand, IQ testers' ratings of attentiveness correlated more highly with achievement than with ability.

3. Among the measures of ability, the IQ ratings of persistence correlated significantly with the WISC Performance scale score and the PMA perceptual and space subtests. These findings are of considerable interest, since they seem relevant to the clinical assumption (see Rapaport, 1945 & 1946) that difficulties with impulse control (as reflected in low persistence or poor attentiveness) will have a greater

effect on the Performance than on the Verbal scale of the Wechsler. In other words, where a child obtains a low score on the Performance scale, particularly if this is in contrast to a much higher score on the Verbal scale, it is felt that his functioning is being inhibited by difficulties with impulse control.

Our findings seem to validate this assumption. Not only is the correlation of IQ testers' ratings of Persistence with the Performance Scale of the WISC significant (r=.35, less than .01 level of sig. 2 tail test), but there is also a significant correlation between persistence and the score measuring the discrepancy between Verbal and Performance Scale scores on the WISC (variable 17) (r= -.24, significant at the .01 level, 1-tail or .05 level 2-tail test). In other words, the children who obtained a high Verbal Scale score and a low Performance Scale score on the WISC were the ones rated least persistent by the IQ testers.

It is of interest to note that these relationships hold only for the IQ ratings of persistence. Poor persistence in the test setting affects the child's functioning on the Performance scale of the WISC, and seems to represent a general enough characteristic to affect performance on the PMA. But we do not know whether the same child will show poor persistence in other situations; the IQ testers' and teachers' ratings of persistence correlate only .16. There is the possibility that it was particularly the child's behavior in the performance parts of the WISC which provided the cues as to individual differences in persistence.

These findings do not hold for the IQ tester's rating of attentiveness. The only other measure of impulse control which was significantly related to the perceptual-organizational measures of ability on the WISC (but not on PMA) was the PNI residual scale measuring attentiveness.

4. IQ ratings of attentiveness, on the other hand, correlate more highly with achievement than with ability. Among the measures of ability the highest correlation was with the PMA number subtest (the subtest most highly related to academic achievement).

5. IQ ratings of attentiveness were more highly related to reading than to arithmetic achievement.

6. All of the teacher and PNI raw-scale measures of impulse control correlated in the predicted direction with the measures of achievement and ability, with many of the correlations between impulse control and ability being significant and all but three of the correlations with achievement being significant at the .01 level, 2-tail test. The more impulse control a child showed in the classroom, the higher were his scores on tests of ability and achievement. The PNI scale measuring social inhibition was the least highly correlated with ability and achievement. As mentioned before, this scale is less clearly a measure of impulse control than the other variables.

7. The correlations for the PNI residual scales would at first appear to be mostly contrary to our predictions, except for the positive correlation mentioned above between the Attentiveness scale and WISC Performance and a low (.19) positive relationship of this same scale to Arithmetic Fundamentals. The Social Inhibition and Conformity scales are generally negatively related to ability and achievement, and the Impulsivity residual score is positively so. These are the same directions

in which these scales are respectively related to the PNI residual score for Academic Achievement, which was found to be a good predictor of both ability and achievement test scores. These correlations for the residual scales are clearly a function of the partialing procedure by which they were derived. We saw in Chapter III that the intercorrelations among the residual scales suggested a dimension of activity or impulse-expression vs. passivity or inhibition, and that it was the former end of the dimension which seemed related to peer ratings of achievement, once general positive social reputation was partialed out. We now see that this is *also* the *case for objective test measures of* achievement and ability.

8. In general, as was predicted, teachers' and peers' ratings of impulse control correlate more highly with measures of achievement and achievement reputation than they do with measures of ability.

9. The one exception to this was the PMA number subtest which correlated nearly as highly with the measures of impulse control as did the achievement test scores. This finding again is consistent with what has held for the PMA number subtest throughout this study--it being most closely related to the achievement tests. Another possibility, however, is that attentiveness (or resistance to distraction) is particularly necessary for the acquisition and use of numerical skills (see Maccoby and Rau, 1962).

10. In general, the Teachers' ratings of impulse control did not appear to be any more highly correlated with the measures of numerical achievement than they were with measures of verbal achievement. Peer

ratings of impulse control tended to be somewhat more highly correlated with verbal than with numerical achievement, but this does not appear to be a significant difference.

11. The measures of impulse control phrased in positive terms: teachers' ratings of persistence (var 106) and Peer raw score ratings of attentiveness (var 167) and conformity (var 169) . . . were more highly correlated with the measures of ability, achievement and achievement reputation than were those variables phrased in negative terms: teachers' ratings of poor self-control (var 101), and peer ratings of impulsivity (var 172). This may reflect a general positive halo effect in the ratings.

12. The teachers' and peer ratings of impulse control were more highly correlated with the measures of achievement reputation than with the test measures of ability or achievement. This is not surprising since one might expect such contamination in the minds of the raters.

13. Both mothers' and fathers' ratings of impulse control were related to all of the measures of ability, achievement and achievement reputation in the predicted direction. Many of these correlations were significant at either the .01 or .05 level, two-tail test.

14. As was predicted, however, the parents' ratings of impulse control were less highly correlated with measures of ability, achievement and achievement reputation than were the teachers' and peers' ratings of impulse control.

15. There was a great similarity in the relationships of mothers' and of fathers' reports of impulse control to the measures of ability

and achievement reputation. Again, the PMA number subtest was most highly related to both mothers' and fathers' ratings of impulse control, followed by the WISC verbal subscale score.

16. However, surprisingly, fathers' ratings of impulse control were much more highly related to the achievement tests than were mothers' ratings. Further, fathers' ratings of impulse control were no more highly correlated with the measures of numerical than they were with the measures of verbal achievement.

17. Only one of the correlations between mothers' ratings of impulse control and achievement test scores was significant at less than the .01 level, two tail test. This was the correlation with Arithmetic fundamentals, which was substantial (.38). This relationship was in line with our original predictions.

We can only speculate as to why the fathers' ratings should be more highly correlated with the achievement measures than mothers' ratings, and why mothers' ratings correlated with numerical achievement more than verbal, while this was not the case for fathers' ratings. The answers to these questions do not seem to lie in the intercorrelations among the measures of impulse control. Perhaps mothers were judging impulse control more in relationship to the mother's demands on the child, i.e., very closely tied in with the mother-child relationship. Perhaps the boys rated by mothers as having high impulse control are the boys who make less negative attention getting demands on the mothers--i.e., are less dependent. And perhaps this is why we see the highest relationships for mothers' ratings of impulse control with numerical achievement (i.e., high impulse control is related to high independence from mother, which in turn relates to high numerical achievement). The fathers, on the other hand, may be viewing impulse control from a somewhat different viewpoint. There is some indication in the correlations shown in Table 4.12 that mothers' ratings of impulse-control are slightly more closely associated with their reports of self-sufficiency, especially in the area of conformity to adult demands, than are fathers'. The difference is very slight, however. Another possibility is that fathers' estimates of their sons' self-control may be somewhat more influenced by their information as to the boys' performance in school, and less by day-to-day interactions at home.

18. There were very few significant relationships between the experimental measures of distractibility and avoidance of failure and ability or achievement. The few significant correlations were between the increase-in-error distractibility score (152) and the perceptual subtest of the PMA. (Both of these correlations were very low: .17 and .16 respectively.) Correlations with reading achievement seemed to be higher than with numerical achievement.

In general, we may say that our hypotheses were borne out. For the most part, measures of impulse control were directly related to both ability and academic achievement. Correlations were higher for achievement than for ability measures. Among the measures of ability, the PMA number subtest seemed to be most highly correlated with the measures of impulse control.

The teachers' and peer-ratings (raw score) of impulse control were the measures most highly related to achievement reputation and to the standardized measures of academic achievement. In general there were no substantial differences in relationships to verbal and numerical achievement. The experimental measures generated very few significant correlations, and this may well have been a function of poor reliability (see Chapter III).

d. Ability and Achievement Related to Social Adjustment

Both the Teachers' ratings and the PWI raw score ratings of popularity were positively related to all the measures of ability, achievement, and achievement reputation. In other words, children who are high achievers and who have intellectual ability tend to be rated as more popular by both peers and teachers, and are seen by teachers as possessing "social virtues." However, the correlations indicated only a moderate degree of relationship. As would be expected, the correlations of popularity were higher with measures of achievement and achievement reputation than with measures of ability. As has been consistently reported in the other relationships of personality measures with measures of ability and achievement, the two measures of ability which seem most related to the personality variables we chose to study are the WISC Verbal scale score and the PMA Number subtest. As may also be recalled, these are the measures which also seem to correlate most highly with academic achievement.

The apparently rather puzzling findings for the PWI residual popularity scale which correlates consistently negatively with the

Table 4:20. Correlation between Ability and Achievement and Social Adjustment

	SOCIAL ADJUSTMENT					
	Popularity TR (2)	Popularity PNI (Res)	Popularity PNI (Raw)	Social Virtues TR (K)	Social Virtues TR (1)	Social Virtues TR (2)
ABILITY-ACHIEVEMENT	108	160	170	86	92	100
2 WISC-Verbal	.28**	.12	.36**	.18	.20	.22*
3 WISC-Performance	.01	-.21*	.17	.01	.01	.05
4 WISC-Full Scale	.17	-.21*	.32**	.11	.10	.16
38 PMA-Verbal	.09	-.06	.23*	.17	.17	.12
39 PMA-Space	-.05	-.08	.04	.00	.00	.01
40 PMA-Number	.44*	-.23*	.33**	.17	.32**	.42**
41 PMA-Perceptual	.10	-.10	.06	-.03	-.06	.00
42 PMA-Total	.24*	-.16	.22*	.09	.13	.20*
31 Primary Word Reading-1	.39**	-.27**	.36**	.15	.30**	.26**
32 Primary Sentence Reading-1	.39**	-.37**	.32**	.19	.27**	.31**
33 Primary Paragraph Reading-1	.42**	-.23*	.35**	.13	.29**	.32**
36 Reading-AWR-2	.41**	-.32**	.38**	.15	.37**	.36**
37 Reading ASR-2	.36**	-.27**	.32**	.15	.36**	.32**
34 CAT-Reasoning	.46**	-.21*	.32**	.13	.38**	.37**
35 CAT-Fundamentals	.45**	-.29**	.28**	.04	.33**	.33**
99 Reading Achievement-TR (2)	.47**	-.26**	.53**	.31**	.34**	.47**
105 Number Achievement TR (2)	.53**	-.31**	.50**	.28**	.38**	.47**
158 Acad. Achievement PNI (Res)	.14	-.47**	-.10	-.11	.01	.07
168 Acad. Achievement PNI (Raw)	.59**	-.39**	.82**	.26*	.52**	.60**

* $p < .05$

** $p < .01$

achievement measures, may be explained by the data reported in Chapter III on the structure of the PNI residual scales. The interpretation was offered there that this residual scale represented a variable of sociability in the classroom situation which peers perceived as antithetical to academic achievement. This interpretation, and the peers' judgments, would seem to be borne out by the correlations with the objective achievement tests.

There seems to be no support from our data for our hypothesis that popularity would be more highly related to numerical than to verbal achievement.

In summary, our hypothesis 14, that children with good social adjustment seem to be high achievers, is substantiated by our results. However, there is nothing in our findings to support our prediction (Hypothesis 15) that social adjustment in second grade boys is more highly related to numerical than verbal achievement.

4. PARENTAL ATTITUDES AS ANTECEDENTS OF ACHIEVEMENT-RELATED PERSONALITY VARIABLES

Our original hypotheses about parental antecedents related the four areas of child-personality to four specific dimensions of parent attitudes: rejection, restrictiveness, positive demands for self-sufficiency and reasoning. The predictions were as follows:

> Hypothesis 7. The more rejecting the parent, the lower his or her child will score in measures of self-sufficiency, mastery, social adjustment and impulse control.
>
> Hypothesis 8. The more restrictive the parent, the lower the child will score on measures of self-sufficiency, mastery, social adjustment and impulse control.

> Hypothesis 9. The more positive demands the parent makes for self-sufficiency, the higher the child will score in measures of self-sufficiency, mastery, over-all social adjustment and impulse control.

> Hypothesis 10. The more the parent uses reasoning, the higher the child will score in measures of self-sufficiency, mastery, over-all adjustment and impulse control.

The data presented in Chapter III on the structure of the parent questionnaire scales suggest that each of these dimensions of parent attitudes is represented by several of the scales included in our questionnaires, which intercorrelate highly and seem to load on the same dimensions in factor-analyses. There are some minor differences in structure between mother and father attitudes, and the introduction of additional scales in the second-grade version led to more diversity. We may say, however, that each of the parent-attitude dimensions is represented by the following sets of scales:

Rejection: by the Rejection scale and by low scores on Self-esteem, for fathers by low Closeness to Father, and in the second grade data by high scores on Parental Aggression and low scores on Positive Mother-Father Relationship (for mothers).

Restrictiveness: by the Restrictiveness scale, by Sex-Anxiety, and in the second-grade data to some extent by Punitiveness and Sex-role Expectations. The Use of Models scale seems also to belong with this dimension, although for fathers it implies rejection; high scores on this scale seem to mean that the parent is critical of the child.

Positive Demands for Self-Sufficiency: represented by Contingent Reward, by Democracy, by Rewarding Independence and in the second-grade data also by low scores on the Age Expected Independence scale. In the kindergarten data, Achievement Standards also formed a part of the cluster, but this scale correlates with Demands for Aggression in the second-grade data, and seems to represent a somewhat different, possibly less rewarding and more pressuring, set of attitudes.

Reasoning: is represented by the Reasoning scale. It may best be considered a part of the preceding cluster.

Tables 4.21 through 4.24 (a and b) present the data on the relationships of the child personality variables to the parent attitudes, and to some other information about the family gathered in the parent questionnaires. All correlations significant at less than the .10 level of probability for a two-tailed test are included. (Correlations at the .10 level, when relevant to a specific prediction, may be considered significant at the .05 level by a one-tailed test.)

a. Antecedents of Self-Sufficiency: The data on Self-Sufficiency substantially confirm several of our hypotheses. The strongest relationships seem to be with maternal rejection (inverse) and rewarding independence (Table 4.21a). For mothers, low scores on Rejection and high scores on Self-Esteem and Rewarding Independence, in response to questionnaires taken at the end of kindergarten, not only relate significantly to the child's current level of self-sufficiency, but also predict self-sufficiency in second grade as reported by teachers and peers as well as by the parents themselves. (Only the summary scores, variables 208 and 248, for parents' reports of self-sufficiency have been included in these tables.) Particularly interesting is the negative relationship between mothers' scores on Democracy and Help-

Table 4.21a Correlations between mother attitudes and self-sufficiency variables.

		Mo.-Child Behav. Des.	Fa.-Child Behav. Des.	Self-suffic. Fa. report 2nd grd.	Self-suffic. Mo. report 2nd grd.	Maturity-TR(K)	Maturity-TR(1)	Self-suffic. TR(2)	Help-seeking PNI (Res)	Help-seeking PNI (New)
KINDERGARTEN ATTITUDES		43	44	208	248	88	98	109	162	172
Contingent Reward	61								-23*	
Rejection	62	-28*	-44**	-20	-27*		-21	-28**		.23*
Sex Anxiety	63									.20
Restrictiveness	64						-25*			
Self-esteem	65	22	43**	21	27*			25*	24*	-.20
Use of Models'	66									.28**
Resemblance to parent	67		-39*						-19	
Democracy	68								-30**	
Reward Independence	69	31**	36*	32*	31**				-17	
Achievement standards	70								-20	
Reasoning	71	29*							-17	
SECOND GRADE ATTITUDES										
Age expected Independ.	230	-33*	-32	-39**	-26*					
Contingent reward	231		34			20	25*	22*		
Rejection	232	-23	-46**	-21	-32**				-22*	
Sex anxiety	233									
Restrictiveness	234				-26*					
Demand for aggress.	235		36*							
Punitiveness and phy. pun.	236									
Parental aggression	237	-35**	-36*	-30**	-33**		-23*	-22*		
Self-esteem	238	23	53**	33**	31**		24*			
Pos. fa.-mo. relation.	239	22	34*	25*	29**		25*	22*	23*	
Use of models	240									
Sex-role expectations	241								28*	
Resemblance to parent	242									.23*
Democracy	243	22	36*				24*			
Reward independence	244	26*	53**	20			25*			
Achievement stand.	246		41*							
Reasoning	247	23	35*	29*					-21	

Table 4.21a continued

		43	44	200	248	88	98	109	162	172
Satis. with acad. prog.	252		33	44**	34**		42**	42**		-32**
Sat. with other abil.	253						24*			
Parent's concern about child's acad. achiev.	254									
DATA SHEET										
Nursery School	216								20	
Adults in household	217			-29*						
Sep. from par. in past 3 yr. by death, divor. etc.	218									
No. of children in fam.	219							23*	-21	
Ordinal position of S	220									
Mother's education	221						23*		22	
Mother working	222		63*						-19	
Amt. time mother spent caring for child	223								19	
Continuity of Relation	224			22	-18				-18	
No. non-verbal interest	228		34							
Mother's reading time	227		44**			20				
Interest in sports	228									
Child's partic. in mother's activities	229	25		22	19	34**			-19	

Table 4.21b Correlations of father attitudes and self-sufficiency.

		43	44	200	248	88	98	109	162	172
KINDERGARTEN ATTITUDES										
Contingent Reward	72								-25*	
Rejection	73		-41**				-23			
Sex anxiety	74	-29	-27	-51**		-35**				
Restrictiveness	75		-31*						-26*	
Self-esteem	76		27							
Use of models	77		-35*							
Resemb. to parent	78								-24	
Democracy	79									

Table 21.b (continued)

		43	44	208	248	88	98	109	162	172
Reward. independence	80				23					
Closeness to father 83	83						22			
SECOND GRADE ATTITUDES										
Age expected independ.	189		-42*	-31*						
Rejection	191			-32*			-28*			
Sex anxiety	192					-25				
Demand for aggress.	194	23					23			
Punitive. and phy. pun.	195						22		-22	
Parental aggression	196		-34	-20	-28*				-21	
Self-esteem	197			22						
Pos. fa.-mo. relation.	198	37**		24*	27*					
Use of models	199			-27*						
Resemb. to parents	201					25				
Closeness to father	202				-20					
Democracy	203	31*						-25*		
Achievement standards	206		40*			-22				
Reasoning	207	25								
Satis. with acad. achv.	212		32	42**			36**	47**		-28**
Satis. with othr. abil.	213	-28*							26*	
DATA SHEET										
Father's education	181					30*	-26*			
Verbal interests	183		54**		29*					
Fa. reading time	185						-22			
Interest in sports	186				21		27*		30*	
Child's partic. in fa. activities	188			32**						

Table 4:22a

Correlations of Mother Attitudes with Mastery

		MASTERY														
		Mastery-Fa. Rep.-2	Mastery-Mo. Rep.-2	Readiness for 1-TR (K)	Readiness for 1-TR (1)	Constructive Play-TR (K)	Constructive Play-TR (1)	Physical Ability-TR (K)	Physical Ability-TR (1)	Physical Ability-TR (2)	Self-confidence-PNI (Raw)	Curiosity-PNI (Raw)	Masculinity-Wright's	Masculinity-IQ Rater	Masculinity-TR (1)	Masculinity-TR (2)
KINDERGARTEN ATTITUDES		205	245	84	95	85	97	89	94	102	175	176	48	29	93	103
Contingent Reward	61													.30**		
Rejection	62															
Sex Anxiety	63			-.20										.18	.22	
Restrictiveness	64															
Self-esteem	65													-.18		.30*
Use of Models	66															
Resemblance to Parent	67															
Democracy	68				.23*	.27*	.22*				.22*			.27**		
Reward.Independ.	69		.23		.20					.17				.22*		
Achievement Stand.	70													.26**		
Reasoning	71											.20		.18		
SECOND GRADE ATTITUDES																
Age Expctd Indep.	230															
Contingent Reward	231		.39**		.24		.22	.28*	.31**	.28*		.24*	.26*			
Rejection	232		-.26													
Sex Anxiety	233								.20						.23*	
Restrictiveness	234							.26*								
Demands for Aggr.	235		.21			-.29*								.23*		
Punitveness and Physical Punish.	236			-.19				.20						.32**		
Parental Aggress.	237		-.23*		-.26						-.19	-.27*				
Self-esteem	238		.29*				.19		.18							

CONTINUED

Table 4:22a (continued)

		205	245	84	95	85	97	89	94	102	175	176	48	29	93	103
Positive Father-Mother Relation.	239		.21					.20	.32**		.25*					.23*
Use of Models	240		-.26*			.20					-.21	.20				
Sex-role Expect.	241			-.20		-.25*						-.25*				
Resemb.to Parent	242	-.19	.35**					.19					.29*	.24*		
Democracy	243		.34**				.20		.22				.30**	.34**		
Reward.Indep.	244		.42**	.24*				.33**			.21			.32**		
Achievement Stand.	246							.19	.23*					.25*		
Reasoning	247		.34**		.22		.21	.28*	.24*	.22*	.48**	.32**		.30**		
Satis. with Academic Prog.	252	.37**	.24*	.20	.44**		.24*			.20	.30**	.26*	.33**			.34**
Satis. with other abilities	253				.23*							.25*				
Parent's Concern about Child's Acad.Achievement	254													-.30		
DATA SHEET																
Nursery School	216															
Adults in Hshld	217							-.31**					-.54**			-.26
Separation from Parent in past 3 yrs by death, divorce, etc.	218		.20													
No. of Children in Family	219	-.25*												.20	.26*	
Ordinal Position of S	220	-.30*			-.24*						-.27*	-.38**			.22	
Mother's Educat.	221			.29*												.19
Mother Working	222							-.23*						.23*	.26*	
Amt.time Mother spent caring for Child	223						-.31*				-.19					
Continuity of Relation.	224															

CONTINUED

Table 4:22a (continued

		205	245	84	95	85	97	89	94	102	175	176	48	29	93	103
Mother's Verbal Interests	225							-.25*						-.20	-.19	
Mo. non-verb. Int.	226	.30*			.19										-.21	
Mo. Reading Time	227															
Int. in Sports	228			.23	.24*			.18								
Child's Particip. in Mo.Activities	229			.39**	.21	.27*										

Table 4:22b

Correlations of father attitudes with Mastery

MASTERY

		205	245	84	95	85	97	89	94	102	175	176	48	29	93	103
KINDERGARTEN ATTITUDES																
Contingent Reward	72					-.33*										
Rejection	73														.25	
Sex Anxiety	74			-.35**		-.25									.25	
Restrictiveness	75		-.25												.29*	
Self-esteem	76											.22				
Use of Models	77		-.28													
Resembl. to Parent	78				.28*						.31*					
Democracy	79							.29			.21			.31*	.23	
Rewarding Indep.	80							.24			-.25*					
Achievement Stand.	81	.31*									.34**	.28				
Reasoning	82										-.30*	-.23				
Closeness to father	83	.30*		.24	.25						.41**	.32*				
SECOND GRADE ATTITUDES																
Age Expctd Indep.	189		-.20							-.26*	-.30*			-.26*		-.23
Contingent Reward	190	.42**			.24											
Rejection	191	-.20		-.24												
Sex Anxiety	192			-.31*											.21	
Restrictiveness	193															
Demand for Aggres.	194															
Punitiveness and Physical Punish.	195				.23		.27*									

CONTINUED

Table 4:22b (continued)

		205	245	84	95	85	97	89	94	102	175	176	48	29	93	103
Parental Aggres	196															
Self-esteem	197										.24*	.31*				.28*
Positive Fa.-Mo. Relationship	198															
Use of Models	199							-.25			-.21					
Sex role Expect.	200	.20								.21		.20				
Resemblance to Parents	201	.37**		.25							.28*	.23				
Closeness to Fa.	202												-.34*			
Democracy	203	.47**														
Reward.Independ.	204	.36**	-.26*									-.24*				
Achievement Stand.	206					-.27*						-.25*				
Reasoning	207	.39**														
Satisfaction with Academic Progres	212	.24*		.29*	.41**		.21				.37**		.49**			.20
Satisfaction with other Abilities	213		-.25*							-.33**						-.23
Parent's Concern about Child's Acad. Achvmnt.	214						-.30*									
DATA SHEET																
Parental Rela.	180								-.22	-.21						-.30*
Father's Educa.	181			.42**		.23	-.24				.20					
Continuity of Relation.	182				.29*											
Verbal Interests	183		.23													
Non-verbal Int.	184		-.49**			.22			-.33**						-.32*	
Father's Rdg.Time	185						-.36**	-.39**	-.27*						-.21	
Interest in Sprts	186			.33*	.25*			.22	.21	.35**		.25*				.28*
Time doing things other than sprts	187															
Child's Particip. in Fa. Activities	188	.28*														.31*

* < .05

** < .01

Table 4:23a Correlations of Mother Attitudes to Impulse Control

IMPULSE CONTROL

		Attentiveness-IQ Rater	Persistence-IQ Rater	Poor Self-Control-TR (2)	Avoid Failure-TR (2)	Persistence-TR (2)	Attentiveness-PMI (Raw)	Impulsivity-PMI (Raw)	Social Inhibitions-PMI (Raw)
KINDERGARTEN ATTITUDES		24	26	101	104	106	107	171	174
Contingent Reward	61								
Rejection	62			.35**		-.25*	-.27**	.34**	-.28**
Sex Anxiety	63			.25*				.26*	
Restrictiveness	64			.20		-.17	-.23*	.27**	-.25*
Self-esteem	65			-.40**		.28**	.30**	-.38**	.24*
Use of Models	66			.19			-.22	.21	
Resemblance to Parent	67			.18				.22	-.24*
Democracy	68								
Reward. Independence	69								
Achievement Standards	70			.17					-.21*
Reasoning	71								
SECOND GRADE ATTITUDES									
Age Expected Independ.	230								
Contingent Reward	231				-.19				
Rejection	232			.26*			-.21	.26*	-.22
Sex Anxiety	233				-.19	.19			
Restrictiveness	234			.37**					-.21
Demands for Aggress.	235								
Punitiveness and Physical Punish.	236			.31**				.25*	
Parental Aggression	237								-.21
Self-esteem	238			-.27*			.25*	-.23	
Positive Father-Mother Relation.	239			-.25*			.34**	-.31**	
Use of Models	240								
Sex-role Expectations	241								
Resemblance to Parent	242			.22*			-.23*	.20	
Democracy	243								
Rewarding Independence	244		.21						
Achievement Standards	246	-.21			-.19				
Reasoning	247			.23*	-.19			.21	
Satisfaction with Academic Progress	252	.25*		-.19		.40**	.47**	-.31**	
Satisfaction with other Abilities	253						.25*		
Parent's Concern about Child's Acad. Achvmt.	254								

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Table 4:23a (continued)-Correlations of Mother Attitudes to Impulse Control

		IMPULSE CONTROL									
		Conformity-PMI (Raw)	Attentiveness-PMI (Res)	Impulsivity-PMI (Res)	Social Inhibitions-PMI (Res)	Conformity-PMI (Res)	Impulse Control-Fa. SPQ (2)	Impulse Control-Mo. SPQ (2)	Distraction-Diff. Corr.	Distraction-Error Increase	Avoid. Failure
KINDERGARTEN ATTITUDES		169	157	161	164	159	211	251	149	152	51
Conting. Reward	61					-.17					
Rejection	62	-.31**		.19	-.22*	-.24*	-.31*	-.52**			
Sex Anxiety	63									.18	
Restrictiveness	64	-.22*		.17	-.24*						
Self-esteem	65	.29**		-.32**	.25*	.23*	.27*	.42**		-.24*	
Use of Models	66										.18
Resemb. to Parent	67			.27*	-.24*	-.20			.23*		.27**
Democracy	68									-.21*	
Reward. Independ.	69							.24*			
Achievement Stan.	70			.22*	-.25*	-.17					
Reasoning	71							.21*			
2ND GRD ATTITUDES											
Age Expctd. Ind.	230							-.27*	-.19	-.20	
Conting. Reward	231					-.20					
Rejection	232	-.29*		.31*	-.21	-.36**	-.25*	-.40**			.20
Sex Anxiety	233								-.21		
Restrictiveness	234			.27*	-.22			-.36**			
Dem. for Aggress.	235										
Puntv & Phys.Pun.	236			.19	-.21	-.19		-.30**			
Prntl Aggress.	237	-.24*				-.18	-.34**	.26**			
Self-esteem	238	.26*		-.25*		.26*	.31*	.38**		-.22*	
Pos.Fa-Mo. Rela.	239	.40**		-.21		.35**	.21	.24*	-.31**	-.19	
Use of Models	240										
Sex-role Expecta.	241		.20								
Resemb. to Prnt.	242	-.21				-.25*	-.22		.29**		
Democracy	243					-.19					
Reward. Independ.	244										
Achievement Stan.	246										
Reasoning	247			.20					.19	.22*	
Satis. with Academic Progress	252	.47**					.55**	.33**			
Satis. with other Abilities	253	.35**	-.20								
Parent's Concern about Child's Acadm. Achv.	254						.25*				

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Table 4:23a (continued) Correlations of Mother Attitudes to Impulse Control

IMPULSE CONTROL

		Attentiveness-IQ Rater	Persistence-IQ Rater	Poor Self Control-TR (2)	Avoid. Failure-TR (2)	Persistence-TR (2)	Attentiveness-PMI (Raw)	Impulsivity-PMI (Raw)	Social Inhibitions-PMI (Raw)
DATA SHEET		24	26	101	104	106	167	171	174
Nursery School	216								
Adults in Hshld	217			.25*	.26*				.22*
Sep. from Par. in past 3 years by Death,Div., etc.	218								
No. of Chil.in Fam.	219		-.19		-.20				
Ordinal Position of S	220					-.21	-.30**		
Mother's Education	221								
Mother Working	222		.22	.20		-.18	-.20	.21	
Amt. time Mo. spent Caring for Child	223								
Contin. of Rela.	224								
Mo. Verb. Int.	225				.22				
Mo. Non-verb. Int.	226								
Mo. Reading Time	227	-.19							
Int. in Sports	228								
Child's Partic. in Mo. Activities	229	.20				.22			

Table 4:23b Correlations of Father Attitudes to Measures of Impulse Control

IMPULSE CONTROL

KNDRGRTN ATTITUDES		24	26	101	104	106	167	171	174
Contingent Reward	72								
Rejection	73							.21	
Sex Anxiety	74				-.25				
Restrictiveness	75								
Self-esteem	76		-.21				.30**		.20
Use of Models	77								
Resembl. to Parent	78				-.30*				
Democracy	79				-.34*				-.21
Reward. Independ.	80	.28*							
Achievement Stan.	81						.28*		
Reasoning	82	.29*					-.20		
Closeness to Fa.	83						.25*		

CONTINUED

Table 4:23a (continued) Correlations of Mothers Attitudes to Impulse Control

IMPULSE CONTROL

		Conformity-PMI (Raw)	Attentiveness-PMI (Raw)	Impulsivity-PMI (Raw)	Social Inhibitions-PMI (Raw.)	Conformity-PMI (Raw)	Impulse Control-Fa. SPQ (2)	Impulse Control-Mo. SPQ (2)	Distraction-Diff. Corr.	Distraction-Error Increase	Avoid. Failure
DATA SHEET		169	157	161	164	159	211	251	149	152	51
Nursery School	216		.18								
Adults in Hshld	217		.18		.23*						
Sep. from Par. in Past 3 yrs. by Death, Div., etc.	218	-.20				-.25*	-.23		.29**		
No. of Chil. in Fam.	219		-.27*						-.19		-.13
Ordinal Pos. of S	220	-.25*	-.23*	.20							
Mother's Educ.	221			-.18		.19	.24*	.30**			
Mother Working	222			.25*							
Amt. Time Mo. Spent Caring for Child	223		-.19								.31
Continuity of Rela.	224										
Mother's Verb. Int.	225								-.32**	-.23*	
Mo. Non-verb. Int.	226						.20	.26*			
Mo. Reading Time	227										
Int. in Sports	228								.21		
Child's Partic. in Mo. Actv.	229						.38**	.22*			

Table 4:23b Correlations of Father Attitudes to Measures of Impulse Control

IMPULSE CONTROL

KINDERGTN ATTITUDES		169	157	161	164	159	211	251	149	152	51
Conting. Reward	72										
Rejection	73						-.40**				
Sex Anxiety	74						-.25	-.31*			
Restrictiveness	75						-.30*	-.24			
Self-esteem	76	.24	.25*	-.20			.40**				
Use of Models	77						-.32*				
Resembl. to Parent	78										
Democracy	79				-.29*			-.35*			
Reward. Independ.	80										
Achvmnt. Stand.	81	.28*									
Reasoning	82	-.21									
Closeness to Fa.	83	.26*									

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Table 4:23b - Correlations of Father Attitudes to Measures of Impulse Control

IMPULSE CONTROL

		Attentiveness- IQ Rater	Persistence- IQ Rater	Poor Self-Control- TR (2)	Avoid. Failure- TR (2)	Persistence- TR (2)	Attentiveness- PMI (Raw)	Impulsivity- PMI (Raw)	Social Inhibitions- PMI (Raw)
2ND GRD ATTITUDES		24	26	101	104	106	167	171	174
Age Expctd. Indep.	189				.24				
Contingent Reward	190								
Rejection	191								
Sex Anxiety	192								
Restrictiveness	193			.26*					-.20
Demand for Aggress.	194								
Pntvness & Physical Punishment	195		.20						
Parental Aggress.	196			.31		-.23	-.20	.24*	
Self-esteem	197								
Positive Fa-Mo. Rela.	198	.30*		-.20					
Use of Models	199					-.25*	-.26*		
Sex-role Expecta.	200				-.26*				
Resembl. to Parents	201								
Closeness to Fa.	202								
Democracy	203								
Rewarding Independ.	204								
Achievement Stan.	206								
Reasoning	207		.22						
Satis. with Acadm. Progress	212					.41**	.37**	-.25*	
Satis. with other Abilities	213							-.22	.25*
Parent's Concern abt. Child's Acad. Achv.	214								
DATA SHEET									
Parental Rela.	180				.23	-.27*			
Father's Education	181								
Continuity of Rela.	182								
Verbal Interests	183								.21
Non-verbal Int.	184		.22		.21				
Father's Reading Tm	185								
Interest in Sports	186				-.26*	.40**		-.20	
Time Doing Things other than Sports	187		.22						
Child's Partic. in Fa. Activities	188								

* < .05
** < .01

Table 4:23b (continued)-Correlations of Father Attitudes to Measures of Impulse Control

		IMPULSE CONTROL									
		Conformity-FMI (Raw)	Attentiveness-FMI (Raw)	Impulsivity-FMI (Raw)	Social Inhibition-FMI (Raw)	Conformity-FMI (Raw)	Impulse Control-Fa. SSQ (2)	Impulse Control-Mo. SSQ (2)	Distraction-Diff. Corr.	Distraction-Error Increase	Avoid. Failure
2ND GRD ATTITUDES		169	157	161	164	159	211	251	149	152	51
Age Expctd. Ind.	189										
Contingent Reward	190										
Rejection	191						-.53**	-.25*			
Sex Anxiety	192								-.30*		
Restrictiveness	193			.26*	-.23		-.23		-.27*		
Demand for Aggr.	194										
Pntvnss and Phys. Punish.	195										
Parental Aggrss.	196		-.26*	.29*			-.38**	-.28*			.20
Self-esteem	197	.20					.29*				
Positive Fa.-Mo. Relationship	198			-.20			.30*	.23			
Use of Models	199	-.24									
Sex-role Expecta.	200	.21					.22				
Resmbl. to Par.	201										
Closeness to Fa.	202										
Democracy	203										
Reward. Indep.	204		.25*								-.20
Achvmt. Stan.	206									-.21	
Reasoning	207						.25*		-.33**		
Satis. with Acad. Prog.	212	.39**					.48**	.27*			
Satis. with Other Abil.	213		.20	-.35**	.33**	.20		-.23	.29*		
Par. Conc. about Ch. Acad. Achv.	214										.23
DATA SHEET											
Parental Rela.	180						-.41**				
Fa. Educa.	181										
Cont. of Rela.	182										
Verbal Interests	183			-.27*	.26*				-.25*	-.25*	
Non-verb. Int.	184		.28*								
Fa. Reading Time	185										
Int. in Sports	186	.27*					.23	.21			-.20
Time doing Thngs Other than Spts	187							.21			
Child's Particip. in Fa. Act.	188						.32**				

* < .05
** < .01

Table 4:24a Correlation of Mother Attitudes and Social Adjustment

SOCIAL ADJUSTMENT

		Popularity-TR (2)	Popularity-PMI (Raw)	Popularity-PMI (Res)	Social Virtues-TR (K)	Social Virtues-TR (1)	Social Virtues-TR (2)
KINDERGARTEN ATTITUDES		108	170	160	86	92	100
Contingent Reward	61						
Rejection	62	-.24*				-.31**	-.40**
Sex Anxiety	63			.25*		.21	
Restrictiveness	64			.22*		-.26*	-.22*
Self-esteem	65	.26*				.34**	.35**
Use of Models	66		-.18				
Resemblance to Parent	67					-.19	-.19
Democracy	68						.17
Reward. Independ.	69		.21				
Achievement Stand.	70						
Reasoning	71						
SECOND GRADE ATTITUDES							
Age Expected Independ.	230						
Contingent Reward	231	.27*	.21	.24*			
Rejection	232	-.26*	-.22*			-.30**	-.18
Sex Anxiety	233						
Restrictiveness	234					-.18	-.22*
Demands for Aggression	235						
Punitiveness and Physical Punishment	236					-.31**	
Parental Aggression	237	-.26*	-.31**				
Self-esteem	238	.21	.23*			.24*	
Positive Father-Mother Relation.	239	.34**	.34**			.34**	.20
Use of Models	240						
Sex-role Expectations	241						
Resemblance to Parent	242						
Democracy	243						
Rewarding Independence	244						
Achievement Standards	246			.27*			
Reasoning	247						
Satisfaction with Academic Progress	252	.39**	.35**	.40**		.29*	.21
Satisfaction with other abilities	253	.18	.36**			.30**	
Parent's concern about Child's Acad. Achvmnt.	254						

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Table 4:24a (continued)

DATA SHEET		108	170	160	86	92	100
Nursery School	216	-.24*	-.19				-.18
Adults in Household	217						
Separation from parents in past 3 years by death, divorce, etc.	218					-.26*	-.22*
No. of children in family	219						.19
Ordinal Position of S	220			.25*			
Mother's Education	221				.29*	.19	.23*
Mother Working	222				-.24*		
Amount time mother spent caring for child	223					.20	
Continuity of Relation.	224						
Mother's verbal interests	225	-.21					
Mo. non-verbal interests	226						
Mother's reading time	227						
Interest in sports	228						
Child's particip. in Mo. activities	229						

Table 4:24b Correlations of Father Attitudes and Social Adjustment

SOCIAL ADJUSTMENT

KINDERGARTEN ATTITUDES		108	170	160	86	92	100
Contingent Reward	72				-.33*		
Rejection	73					-.22	
Sex Anxiety	74				-.34		
Restrictiveness	75						
Self-esteem	76		.26*				
Use of Models	77					.23	
Resemblance to Parent	78					.27*	
Democracy	79	.34**					
Rewarding Independence	80	.25*					
Achievement Standards	81		.35**			.33*	
Reasoning	82		-.28*				
Closeness to father	83		.35**			.34*	
SECOND GRADE ATTITUDES							
Age Expected Independ.	189	-.24*	-.22				
Contingent Reward	190						
Rejection	191					-.26*	
Sex Anxiety	192				.29*		
Restrictiveness	193						
Demand for Aggress.	194					.25*	.21
Punitiveness and Physical Punishment	195						
Parental Aggression	196			.20			
Self-esteem	197		.21			.22	
Positive Fa.-Mo. Rela.	198						
Use of Models	199		-.28*				
Sex role Expectations	200	.25*					.20

CONTINUED

Table 4:24b (continued)

		108	170	160	86	92	100
Resemblance to Parents	201		.28*			.25*	
Closeness to Father	202			-.20			
Democracy	203				-.23	.22	
Rewarding Independence	204						
Achievement Standards	206		-.21				
Reasoning	207						
Satisfaction with Academic Progress	212	.32**	.20	-.52**			.26*
Satisfaction with other abilities	213			-.20			
Parent's Concern about Child's Academic Achv.	214					-.24	
DATA SHEET							
Parental Relationship	180	-.30*				-.37**	-.26*
Father's Education	181		.22		.25		
Continuity of Relation.	182						
Verbal Interests	183						
Non-verbal Interests	184	-.21	-,24*				
Father's Reading Time	185						
Interest in Sports	186	.44**	.27*		.30*		.22
Time doing things other than sports	187						
Child's participation in Father's Activities	188						

* < .05
** < .01

seeking as reported by peers. These findings are supported by the second grade data, where Self-Sufficiency is additionally related to expressions of positive attitudes towards the father (Positive Mother-Father Relationship). Maternal restrictiveness seems to have little effect on self-sufficiency--only two significant negative correlations appear.

Restrictiveness does appear to be a more important dimension of fathers' influence on the development of their sons' self-sufficiency. (Table 4.21b) Most of the significant correlations with early father attitudes are with Sex-anxiety, Restrictiveness and Use of Models (all negative). The only other significant predictive correlation is between PNI Help-Seeking and Contingent Reward (-.25). In the second grade data, relationships for Parental Aggression and Positive Mother-Father Relationship appear, similar to those for mothers. The correlations for Democracy are inconsistent, as are those for Achievement Standards, but there is some indication that for fathers the kinds of demands implied by the latter scale, and by Demands for Aggression, may relate to self-sufficiency.

A good many of the significant correlations for fathers, however, are between expressions of attitudes and their own appraisals of their sons' self-sufficiency, and one may well raise the question of whether fathers' attitudes are not reactive rather than predictive. For both parents, the child's self-sufficiency is highly related to satisfaction with academic progress (correlations range from .28 to .47). (It will be seen that this is true for the other areas of mature behavior as well.)

This may simply indicate the parents' recognition that their son is doing well, or may imply that their attitudes toward him are generally supportive. Probably both are true.

There is some indication in the variables scored from the parent data sheets of other conditions in the family which may increase the child's self-sufficiency. The more self-sufficient boys tend to come from families where there are several children, no adults other than the parents, the mother may work, and the parents have a variety of interests and allow the child to participate in their activities. In such a family situation, a child may be more likely to learn early to be a self-sufficient and perhaps contributing member, and self-reliant behavior will in turn be positively evaluated by parents.

We may conclude, with respect to the antecedents of self-sufficiency, that Hypotheses 7 and 9 are confirmed in the data on mother attitudes, and Hypothesis 8 seems to apply primarily to fathers' attitudes.

b. Parental Antecedents of Mastery: The attitude of mothers measured at kindergarten level which seems primarily to predict Mastery is Democracy, part of the positive demands for self-sufficiency cluster. It is significantly related to teachers' ratings of readiness and constructive play and peers' ratings of self-confidence. Others of the "rewarding self-sufficiency" cluster of variables appear to be slightly related to several of the mastery measures. The positive relationship between masculinity and sex-anxiety is rather puzzling; a possible interpretation is that mothers with high sex-anxiety emphasize the cultural stereotypes of sex-appropriate behavior.

On the whole, however, there are more early father attitude scales which seem to predict the Mastery measures. Closeness to Father is clearly the most important variable, and Achievement Standards also relates significantly to both peer-ratings and father's own reports. Resemblance to Parent parallels Closeness to Father. The Restrictiveness-Sex Anxiety dimension is slightly negatively related to two of the mastery variables, as it is for mothers, but again it appears to be positively related to masculinity. The "Rewarding Self-Sufficiency" cluster of variables seems to have mixed relationships: Democracy is positive, as it is for mothers, Reasoning is negative, and Rewarding Independence is positive with an early teacher rating but negative with one of the peer ratings. We have suggested earlier that perhaps the peer-ratings are picking up a more assertive kind of behavior, which shares some variance with the measures of "impulsivity," and that such behavior is reinforced by a rather dominant father, who plays an active, directive role in his son's life, and is not likely to use primarily verbal techniques in controlling his behavior. (The negative correlations of the Mastery variables with father's reading time would support this view.)

The father attitudes expressed at second grade level which correlate with Mastery tend to reinforce this impression, although here Reasoning is positively related to the parent's own report of the child's mastery, as is Democracy. (These are both SPQ scales, of course, and there may be a halo effect operating, or perhaps fathers are more likely to see reasoning as an appropriate technique to use with older boys.) The cluster of second grade father-attitudes which seems most consistently related to the Mastery measures is Resemblance to Parent, Sex-role Expectations, Self-Esteem and low Age Expected Independence. This suggests the influence of the father as a positive model for sex-typing and mature behavior. Again the relationships with the Rewarding Self-Sufficiency cluster are mixed, and there is some positive relationship with paternal punitiveness. The fathers of boys high in "mastery" seem satisfied with their sons' academic progress, but not with their other abilities, and perhaps they tend to put pressure on them in other areas than that of academic achievement. Again, these fathers are highly interested in sports.

Perhaps we can clarify these relationships further by describing the "typical father" of the boy who scores generally low in mastery. He spends a good deal of time reading, has several hobbies, but does not have his son participate much in these activities. He is not interested in sports. He does not feel close to his son, sees his son as unlike himself, and tends to have low self-esteem and somewhat undemocratic attitudes. He is not satisfied with his son's academic progress, but is with his other abilities, possibly becasue he does not consider them important. The picture of a distant, uninvolved father who is probably not a very assertive model, emerges rather clearly.

For mothers at second-grade level, the relationship between their sons' Mastery and their rewarding independence is much clearer. There are consistent positive correlations with Contingent Reward, Democracy, Rewarding Independence and Reasoning. The mother of the boy who is high in Mastery tends not to be critical of him or to have explicit sex-role expectations or make demands for aggression or expect self-reliance early, although there are slight indications that she may be somewhat restrictive and have high achievement standards. This is almost the opposite of the picture we found for fathers, and suggests that there may be considerable differentiation between mothers and fathers in their influences on Mastery. Finally, the mother's satisfaction with the father, lack of hostility and (to a slight extent) self-esteem, seem to be consistently related to Mastery. Thus, reward of independence, democracy and positive evaluation of father seem to be the most important maternal influences on Mastery.

We note also, from the data sheets, that the mothers of boys who are high in mastery seem to be interested in sports, rather than verbal activities, and that the child participates in their activities a good deal. Perhaps both parents provide models for competitive activities. The child who is high in mastery also tends to be an older child in the family.

In conclusion, the data on mastery seem to substantiate Hypothesis 9 to some degree, but suggest that a somewhat different pattern of parental characteristics from those originally hypothesized may be more important.

c. Antecedents of Impulse-Control: It is primarily the Rejection dimension of maternal attitudes which seems to predict adequacy of impulse-management (see Table 4.23a) confirming Hypothesis 7. High scores on Rejection and low scores on Self-Esteem measured at kindergarten are consistently related to distractibility and impulsivity, and to low ratings on impulse control. The same set of relationships is evident in the second-grade data, as one would expect since these maternal attitudes are quite stable over time. In the second-grade data, the parental Aggression scale for mothers, which is related to the rejection dimension, also correlates with impulsivity. The Positive Mother-Father Relationship scale is also consistently related to measures of good impulse management. These latter two scales are also the father variables (see Table 4.23b) most consistently related to child behavior in this area. One is led to the conclusion that a family situation in which there is tension between mother and father, both parents express hostile feelings, and the mother is rejecting of both herself and her son is likely to produce the kind of stress which makes it difficult for boys of this age to develop adequate self-control and ability to cope with frustrations and distractions. Conversely, adequate impulse management (or ego-effectiveness) is more likely to develop in a situation in which there is a comfortable and positive parental relationship and the mother holds positive attitudes towards both herself and her son. It is worth noting, also, that maternal separation was negatively related to impulse control.

The relationships of other dimensions of parent attitudes to impulse control are much less clear. Early maternal Sex-Anxiety and Restrictiveness have a slight predictive relationship to impulsivity and distractibility, but the relationships between restrictiveness and punitiveness and poor impulse control are much stronger at second-grade level, and may represent the mother's attempts (somewhat maladaptive ones, to be sure) to control the child's unacceptable behavior. Thus the data would seem to confirm Hypothesis 8, but one should be cautious in assuming a causal relationship.

There are some indications that maternal pressure for maturity and achievement may also lead to less adequate impulse control (e.g., the relationship between Achievement Standards and ratings of impulsivity, and between expectations of early independence and distractibility). The most curious correlations are with mothers' scores on Democracy, Reasoning and Resemblance to Parent. One possible interpretation of these findings is that mothers who tend to identify their sons too closely with themselves, and treat them in an overly egalitarian fashion, may interfere with the development of adequate controls, perhaps producing some confusion over sex-roles and thus an added source of stress.

There are relatively few relationships between father attitudes and independent measures of impulse control, other than the ones already discussed in connection with the parental rejection dimension. Fathers' Sex-Anxiety and Restrictiveness also correlate negatively with parents' reports of impulse control, but one cannot consider these relationships independent, and the correlation between Sex-Anxiety and Avoidance of Failure is in the opposite direction. There are inconsistencies in the correlations with Sex-Anxiety in the second-grade data also. A possible explanation of these inconsistencies lies in the correlation for fathers between Sex-Anxiety and Sex-role Expectations. It seems clear that fathers' sex-role expectations and view of their sons as like themselves are positively related to some aspects of impulse-management, especially to frustration tolerance (low scores on Avoidance of Failure), as they were to mastery. Perhaps the father who provides an adequate model of masculinity to his son and conveys definite standards to him in this area helps him to develop greater persistence and tolerance of failure. The correlations with Father's interest in sports and parental relationship (i.e., whether father is natural father or not) would tend to support this view, although there were so few cases of step-fathers in our study that the correlation is only a very rough measure of association in this case.

The other family characteristics which appear among the correlations for parent data variables are similar to those for self-sufficiency and mastery.

d. Parental Antecedents of Social Adjustment: The maternal attitudes, measured at kindergarten, which seem to predict popularity and general social adjustment (see Table 4.24a) are primarily low scores on the Restrictiveness-Sex-Anxiety dimension, low Rejection and high Self-Esteem, thus confirming Hypotheses 7 and 8 for mothers. For fathers, the same pattern of attitudes which has been found to predict other aspects of mature and desirable adjustment appears here, namely Closeness to Father and positive demands for achievement. This can be taken as substantiating Hypothesis 9, to some extent. Again, Reasoning at this age level is negatively correlated with later adjustment.

As was true for Mastery and Impulse Control, we find that the father of the boy with favorable social adjustment is unlikely to be a stepfather. Again, father's interest in sports is positively correlated. The second grade father attitudes related to social adjustment are generally consonant with those expressed at kindergarten level. There is some evidence of a positive father-son relationship in the one negative correlation with Rejection and in the correlations with Resemblance to Parent. The most important influence seems to be the strong emphasis on appropriate sex-typing. The father of the popular, well-adjusted boy expects independence early, also expects aggressive, assertive behavior, himself provides an aggressive, competitive model through his interest in sports, and has somewhat stereotyped sex-role expectations. Low scores in these attitudes are associated with less favorable social adjustment in the son.

The maternal attitudes correlated with social adjustment expressed at second grade level are again more in the areas of a positive affectional relationship and lower restrictiveness. The more popular and better adjusted boys also seem to have experienced less maternal separation. The mother of the popular boy, whose teacher rates him as high in social virtues, expresses positive affect towards him (low Rejection), also evaluates herself and her spouse positively, and is low in hostility. She is generally (and no doubt realistically) satisfied with her son's progress, academic and otherwise. If we look at the reverse of these relationships, we may conclude, as we did with respect to Impulse Management, that the mother who is generally rather hostile in her attitudes, is dissatisfied in her marriage and with herself and expresses rejection towards her son, will have a negative influence on his social relationships with peers and as viewed by his teacher. Thus, hypothesis 7 seems particularly strongly supported in the data on maternal attitudes related to social adjustment.

5. PARENT ATTITUDES AS ANTECEDENTS OF ABILITY AND ACHIEVEMENT

Our original hypotheses concerning the relationship of parent attitudes to achievement were as follows:

> Hypothesis 1. The more rejecting the parent, the lower wil be the child's achievement in second grade (as measured by achievement tests and teachers' and peers' ratings). This prediction will hold for over-all achievement, and for verbal and numerical achievement.
>
> Hypothesis 2. The more restrictive the parent, the lower wil be the child's over-all achievement in second-grade.
>
> Hypothesis 3. Parental restrictiveness will have a greater negative effect on numerical than on verbal achievement.
>
> Hypothesis 4. The more positive demands the parent makes on the child for self-sufficiency, the higher will be the child's academic achievement in second-grade.
>
> Hypothesis 5. Parental demands for self-sufficiency will have a greater positive effect on numerical than on verbal achievement.
>
> Hypothesis 6. The more the parent uses reasoning as a child-rearing technique, the higher will be the child's over-all verbal and numerical achievement in the second-grade.

These hypotheses were formulated before we had clarified our theoretical position as to the relationship of achievement to ability, and before the data collected by Anastasiow on the kindergarten sample were fully analyzed. Anastasiow's findings emphasize the importance of appropriate sex-typing as a developmental process mediating, among other things, cognitive effectiveness and academic achievement. The results of his study, summarized in our introductory chapter, suggest that a somewhat different constellation of parent attitudes, those related to appropriate sex-role development, may also be of great importance in influencing achievement, and further, that the influence of certain parent attitudes on achievement may be greatly enhanced in appropriately sex-typed boys. Additional parent measures relevant to sex-typing collected in this project will enable us to expand this analysis of the data.

In the discussion of results which follows, we plan first to examine the data relevant to our original hypotheses. Next we will compare the relationships of parent attitudes to our measures of ability, especially the WISC scores, with those found for the achievement variables. And finally we will further explore the relationships between parent attitudes and achievement as a function of the transmission of culturally appropriate sex-role expectations and enactments. The data relevant to these questions are presented in Tables 4.25 to 4.27, a and b.

a. Parent Attitudes and Achievement--Findings Related to Original Hypotheses

The correlations between parent attitudes and achievement test scores obtained in first and second grade are presented in Table 4.25, a and b. Table 4.26, a and b, shows the corresponding relationships for teachers' ratings of Readiness for First-Grade (made at the end of kindergarten), overall Success in First-Grade, and of Reading Achievement, Numerical Achievement and overall Success in Second-Grade. All of these

Table 4:25a Correlations between Mother Attitudes and Achievement Variables.

		ACHIEVEMENT						
		Primary Word Reading (1)	Primary Sentence Reading (1)	Primary Paragraph Reading (1)	CAT-Reasoning (2)	CAT-Fundamentals (2)	Reading Ach.-AWR (2)	Reading Ach.-APR (2)
KINDERGARTEN ATTITUDES		31	32	33	34	35	36	37
Contingent Reward	61							
Rejection	62							
Sex Anxiety	63							
Restrictiveness	64							
Self-esteem	65							
Use of Models	66							
Resemblance to Parent	67							
Democracy	68						.32**	
Reward Independence	69							
Achievement Standards	70						.26*	.26*
Reasoning	71							
SECOND GRADE ATTITUDES								
Age Expected Independence	230							
Contingent Reward	231	-.26*						
Rejection	232							
Sex Anxiety	233							
Restrictiveness	234							
Demands for Aggression	235							
Punitiveness and Physical Punishment	236							
Parental Aggression	237			-.22*		-.23*	-.33**	-.30**
Self-esteem	238					-.29**	.22*	.22*
Positive Father-Mother Relation.	239							
Use of Models	240							
Sex-role Expectations	241							
Resemblance to Parent	242							
Democracy	243							
Rewarding Independence	244							
Child's Mastery	245							
Achievement Standards	246	-.27*	-.24*	-.22*		-.21	-.21	-.21
Reasoning	247							
Satisfaction with Academic Progress	252	.63**	.53**	.49**	.54**	.42**	.55**	.51**
Satis. with other abilities	253							
Parent's concern about Child's Acad. Achvmnt.	254							

CONTINUED

Table 4:25a (continued)

DATA SHEET		31	32	33	34	35	36	37
Nursery School	216							
Adults in Household	217				-.24*			
Separation from parent in past 3 years by death, divorce, etc.	218							-.23*
Number of children in family	219							
Ordinal Position of S	220							
Mother's Education	221							
Mother Working	222							
Amount time Mother spent caring for Child	223							
Continuity of Relation.	224							
Mother's Verbal Interests	225							
Mo. non-verbal Interests	226							
Mother's reading time	227							.26*
Interest in Sports	228	.24*	.24*	.29**		.27*	.29**	.26*
Child's Participation in Mother's Activities	229	.28*	.22				.31**	.23*

Table 4:25b Correlations between Father Attitudes and Achievement Variables

ACHIEVEMENT

KINDERGARTEN ATTITUDES		31	32	33	34	35	36	37
Contingent Reward	72							
Rejection	73							.28*
Sex Anxiety	74							
Restrictiveness	75			.25*				
Self-esteem	76			.24				
Use of Models	77							
Resemblance to Parent	78						.35**	.30*
Democracy	79						.29*	.26*
Rewarding Independence	80							
Achievement Standards	81							
Reasoning	82							
Closeness to Father	83						.28*	
SECOND GRADE ATTITUDES								
Age Expected Independence	189							
Contingent Reward	190							
Rejection	191				-.30*			
Sex Anxiety	192							
Restrictiveness	193							
Demand for Aggression	194							
Punitiveness and Physical Punishment	195							
Parental Aggression	196		-.26			-.30*		

CONTINUED

Table 4:25b (continued)

		31	32	33	34	35	36	37
Self-esteem	197				.28*			
Positive Father-Mother Relationship	198			.33**				
Use of Models	199							
Sex role expectations	200			.29*				
Resemblance to Parents	201							
Closeness to Father	202							
Democracy	203							
Rewarding Independence	204							
Child's Mastery	205							
Achievement Standards	206							
Reasoning	207						.24*	
Satisfaction with Academic Progress	212	.61**	.59**	.56**	.52**	.44**	.55**	.56**
Satisfaction with other Abilities	213							
Parent's concern about Child's Academic Achv.	214							
DATA SHEET								
Parental Relationship	180				-.42**			-.26*
Father's Education	181							
Continuity of Relationship	182							
Verbal Interests	183							
Non-verbal Interests	184						.31*	
Father's Reading Time	185			.26*				
Interest in Sports	186	.37**		.27*	.31*	.25*	.36**	.34**
Time doing things other than Sports	187					-.29*		
Child's Participation in Father's activities	188	.28*	.44**	.30*	.26*			

* < .05
** < .01

Table 4:26a Correlations between Mother Attitudes and Academic Reputation

ACADEMIC REPUTATION

		Readiness for 1-TR (K)	Success in 1-TR (1)	Readiness for 1-TR (1)	Reading Ach.-TR (2)	Number Ach.-TR (2)	Success in 2-TR (2)	Academic Ach.-PNI (Res)	Academic Ach.-PNI (Raw)
KINDERGARTEN ATTITUDES		84	91	95	99	105	107	158	168
Contingent Reward	61								
Rejection	62								-.23*
Sex Anxiety	63	-.20							
Restrictiveness	64								
Self-esteem	65								.22*
Use of Models	66								-.20
Resemblance to Parent	67								
Democracy	68	.28*		.23	.30*	.25*			
Reward Independence	69								
Achievement Standards	70								
Reasoning	71								
SECOND GRADE ATTITUDES									
Age Expected Independ.	230								
Contingent Reward	231			.24	.24				
Rejection	232				-.21				.35*
Sex Anxiety	233								
Restrictiveness	234								
Demands for Aggress.	235								
Punitiveness and Physical Punishment	236		-.20						
Parental Aggression	237		-.21	-.26*			-.23*	-.22	
Self-esteem	238		.26*		.25*				
Positive Fa.-Mo. Relationship	239						.23*		.32**
Use of Models	240								
Sex-role Expecta.	241								
Resemblance to Parent	242								
Democracy	243		.21	.23				.21	
Rewarding Independ.	244								
Achievement Standards	246						-.20	-.21	
Reasoning	247			.22					
Satisfaction with Academic Progress	252	.20	.42**	.44**	.48**	.49**	.56**	.36**	.60**
Satisfaction with other Abilities	253			.23	.22				.36**
Parent's Concern about Child's Acad. Achv.	254								

CONTINUED

Table 4:26a (continued)

DATA SHEET		84	91	95	99	105	107	158	168
Nursery School	216								
Adults in Household	217							-.21	
Separation from Parent in past 3 years by Death, Divorce, etc.	218								-.21
No. of Chil. in Fam.	219								
Ordinal Position of S	220			-.24*					
Mother's Education	221	.29*							
Mother Working	222								-.21
Amt. time Mother spent Caring for Child	223								
Continuity of Rela.	224								
Mother's Verbal Int.	225								
Mo. non-verbal Int.	226								
Mother's Reading Time	227								
Interest in Sports	228			.24					
Child's Participation in Mo. Activities	229	.38**	.39**		.21				

Table 4:26b Correlations between Academic Reputation and Father Variables

ACADEMIC REPUTATION

KINDERGARTEN ATTITUDES		84	91	95	99	105	107	158	168
Contingent Reward	72								
Rejection	73				-.22			-.23	-.21
Sex Anxiety	74	-.34**			-.23	-.21			
Restrictiveness	75								
Self-esteem	76								.22
Use of Models	77		.28*						
Resemblance to Parent	78		.26*					.22	.23
Closeness to Father	79								
Democracy	80								
Reward. Independence	81								.28*
Achievement Standards	82								-.22
Reasoning	83		.27*						.31*
SECOND GRADE ATTITUDES									
Age Expected Independ.	189								-.22
Contingent Reward	190		.26*						
Rejection	191	-.24							
Sex Anxiety	192	-.31*							
Restrictiveness	193								
Demand for Aggress.	194								
Punitiveness and Physical Punishment	195								
Parental Aggression	196								
Self-esteem	197								.28*
Positive Fa-Mo. Rela.	198								

CONTINUED

Table 4:26b (continued)

		84	91	95	99	105	107	158	168
Use of Models	199								-.29*
Sex role Expectations	200								
Resembl. to Parents	201	.25*							
Closeness to Father	202								
Democracy	203								
Rewarding Independ.	204								
Achievement Stand.	206								
Reasoning	207								
Satisfaction with Academic Progress	212	.28*			.46**	.60**	.58**	.44**	.52**
Satisfaction with other Abilities	213								
Parent's Concern about Child's Acadm. Achv.	214								
DATA SHEET									
Parental Relationship	180								
Father's Education	181	.42**							
Continuity of Rela.	182							.21	
Verbal Interests	183								
Non-verbal Interests	184								
Father's Reading Time	185								
Interest in Sports	186	.33**			.24	.36**	.47**		.28*
Time Doing Things Other than Sports	187								
Child's Participation in Fa. Activities	188								

* < .05

** < .01

Table 4:27a Correlations between Mother Attitudes and Ability Measures

ABILITY

		WISC-Verbal	WISC-Performances	WISC-Full Scale	PMA-Verbal	PMA-Space	PMA-Number	PMA-Perceptual	PMA-Total
KINDERGARTEN ATTITUDES		2	3	4	38	39	40	41	42
Contingent Reward	61								
Rejection	62								
Sex Anxiety	63								
Restrictiveness	64					-.26*			
Self-esteem	65					-.26*		-.24*	
Use of Models	66								
Resemblance to Parent	67					.22*		.21*	
Democracy	68		.21*	.22*					
Reward Independence	69			.21*					
Achievement Standards	70								
Reasoning	71	.21*							
SECOND GRADE ATTITUDES									
Age Expected Independ.	230				.20				
Contingent Reward	231	.26*		.24*					
Rejection	232								
Sex Anxiety	233								
Restrictiveness	234								
Demands for Aggression	235								
Punitiveness and Physical Punishment	236	-.21							
Parental Aggression	237								
Self-esteem	238								
Positive father-mother Relation.	239								
Use of Models	240								
Sex-role Expectations	241					-.23*			
Resemblance to Parent	242								
Democracy	243								
Rewarding Independence	244								
Achievement Standards	246								
Reasoning	247								
Satisfaction with Academic Progress	252		.23*	.32**			.46**	.25*	.41**
Satisfaction with other Abilities	253								
Parent's Concern about Child's Acad. Achvmnt.	254								

CONTINUED

Table 4:27a (continued)

DATA SHEET		2	3	4	38	39	40	41	42
Nursery School	216								
Adults in Household	217								
Separation from Parent in past 3 years by death, divorce, etc.	218								
No. of children in Fam.	219								
Ordinal Position of S	220								
Mother's Education	221						.23*		.21
Mother Working	222								
Amount time mother spent caring for child	223								
Continuity of Rela.	224				-.24*				
Mother's Verbal Interests	225								
Mo. Non-verbal Int.	226			.21	.24*			.22	.27*
Mother's reading time	227								
Interest in Sports	228						.21		
Child's Participation in Mo. Activities	229								

Table 4:27b Correlations between Father Attitudes and Ability Variables

ABILITY

KINDERGARTEN ATTITUDES		2	3	4	38	39	40	41	42
Contingent Reward	72						.21		
Rejection	73								
Sex Anxiety	74	-.34**			-.21				
Restrictiveness	75		.27*						
Self-esteem	76	.22							.22
Use of Models	77								
Resemblance to Parent	78								
Closeness to Father	79							.25	
Democracy	80							.21	
Reward. Independence	81	.22							
Achievement Standards	82							.24	
Reasoning	83	.24							
SECOND GRADE ATTITUDES									
Age Expected Independ.	189								
Contingent Reward	190								
Rejection	191								
Sex Anxiety	192	-.27*							
Restrictiveness	193								
Demand for Aggress.	194								
Punitiveness and Physical Punishment	195								
Parental Aggression	196					-.21		-.26*	-.25
Self-esteem	197								

CONTINUED

Table 4:27b (continued)

		2	3	4	38	39	40	41	42
Positive Fa.-Mo. Relationship	198						.28*		
Use of Models	199								
Sex role Expectations	200								
Resemblance to Parents	201			.32**		.26*			
Closeness to Father	202							.25*	
Democracy	203								
Rewarding Independence	204								
Achievement Standards	206	-.32**		-.26*					
Reasoning	207					.25*		.22	.22
Satisfaction with Academic Progress	212	.29*		.30**		.26*	.46**	.23	.37**
Satisfaction with other Abilities	213								
Parent's Concern about Child's Acad. Achvmt.	214								
DATA SHEET									
Parental Relationship	180						-.2-		
Father's Education	181	.37**	.22	.36**	.38**	.23	.21		.26*
Continuity of Relation.	182								
Verbal Interests	183								
Non-verbal Interests	184		.24*	.22				.26*	.24*
Father's Reading Time	185						.25*		
Interest in Sports	186								
Time doing things other than Sports	187				-.21				
Child's Participation in Fa. Activities	188								

* < .05

** < .01

criterion measures are, as we saw earlier, quite highly intercorrelated.

Mothers' attitudes are related to Achievement; however, the correlations are small and not always consistent. Mothers' attitudes in kindergarten of Democracy, Achievement Standards and Self-Esteem are positively related to second grade reading, but second grade Achievement Standards are significantly negatively related to first grade achievement. Thus, mothers with high achievement standards in kindergarten apparently held attitudes which were facilitative for achievement in second-grade. However, those mothers with high achievement standamds in second grade had sons with low first-grade and second-grade reading achievement. Thus we can ask whether high Achievement Standards held in kindergarten are facilitative, but if continued to be held, have negative effects on achievement. We suspect, and find some support in the low correlation between kindergarten and second grade ratings of Achievement Standards (r=.04) that this is not the case. We cannot be sure of our interpretation, but we suspect that those mothers who held high achievement standards in kindergarten no longer do so, and those mothers whose children have not succeeded academically have become more concerned with the area and have stated attitudes expressive of achievement standards. Simply stated, the negative relationship at second-grade may reflect concern over the child's low achievement, or the accumulative effect of high achievement standards on the child. We must note, at this point, that at second grade mothers' Achievement Standards no longer formed part of the "positive demands for self-sufficiency "cluster." (Another interesting bit of data in this connection is that parents' Achievement Standards are significantly negatively correlated with parents' own education.)

For mothers, kindergarten Democracy, Contingent Reward and second grade Democracy, are significantly positively related to the teachers' measures of achievement, but neither consistently or always very highly correlated. Satisfaction With Academic Progress is related to all achievement variables in this domain. Parental Aggression appears as significantly related to first and second grade achievement for both parents.

Thus we have some support in the mother data for hypotheses four and six, but not consistently, nor with correlations explaining a large portion of the variance.

Hypothesis 1 finds some support in the data on father attitudes, in that Rejection is significantly negatively related to arithmetic reasoning ($r= -.30$, $p=.02$).[1] However, neither the antecedent kindergarten attitude nor the second-grade measure of Rejection is significantly related to any other measure of achievement. The other attitudes significantly positively related to arithmetic reasoning for fathers are Self-Esteem ($r=.28$, $p=.05$) and Satisfaction With Academic Progress ($r=.52$, $p=.001$), as are Fathers' Interest in Sports ($r=.31$, $p= .02$) and Child's Participation in Father's Activities ($r= 26$, $p=.05$). Arithmetic reasoning is significantly negatively related to parental relationship ($r= -.42$, $p=.01$), a measure of whether the father is a natural or stepfather. (We reported a similar finding for some of the personality measures.) As we shall discuss, all of the academic achievement variables are correlated with Satisfaction With Academic Progress beyond the .001 level for fathers. Fathers' Interest in Sports and Child's Participation in Father's Activities are significantly positively related to most all of the academic measures of achievement as reported in Table 4.25b.

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[1] Two-tailed test.

From Table 4.25b we see that while the relationships are not always large (yet significant), we find similar patterns for all the academic achievement scores; that is, father's satisfaction with his son's progress, father's interest in sports and the child's participation in the father's activity are significantly positively related to achievement. For first grade Primary Word Reading achievement we find Parental Aggression significantly negatively related (r= -.26, p=.05); for Primary Paragraph Reading there is a significantly positive relation with Restrictiveness (r=.25, p= .05), Self-Esteem (r=.24, p=.06), Positive Father-Mother Relations (r=.33, p=.01), Sex Role Expectation (r=.29, p=.02). Siginificant positive relations are found between the second-grade reading scores and father's attitude in Kindergarten of Contingent Reward, Resemblance to Parents, Democracy and Closeness to Fathers, and second-grade Reasoning.

All in all, those fathers whose son's have high academic achievement appear to have masculine interests (sports), allow the child to participate in their activities, are satisfied with their sons' progress, and are generally deomocratic and reasoning in their attitudes. We must caution that these relationships are not always high and are not consistent for all variables.

The achievements measured by teacher ratings, and correlated with the proficiency measures of academic success, are also related to father attitudes. In general, the same relationships are found (see Table 4.26b): negative relationships with Rejection and Sex Anxiety positive with Reasoning, Contingent Reward, Interest in Sports, and Satisfaction With Academic Progress.

Thus, we also find support in the data on father attitudes for Hypotheses 4 and 6, relating achievement to positive demands for self-sufficiency and reasoning. There is some slight support also for Hypothesis 1, in that a positive father-son relationship is certainly implied by these correlates of achievement.

There is no support for our hypotheses concerning the differential effects of parental attitudes on numerical and verbal achievement, and the reasons for this will be discussed in the next chapter. We recall that the data reported above on the relationships of personality variables to achievement also failed to reveal any differential patterns of relationship to numerical and verbal achievement.

The pattern of parental, and particularly paternal, characteristics and attitudes which emerged as related to second-grade achievement is very similar, as we might expect, to that found for Mastery and some of the other dimensions of achievement-related personality variables. These findings, and their implications for the importance of sex-role development as a process facilitating academic achievement, will be analyzed further in the final section of this chapter. First, however, we wish to examine briefly the relationships between parent attitudes and our measures of ability.

b. Parent Attitudes Related to Ability

The significant correlations between our parent-attitude measures and the measures of ability (WISC and PMA) are shown in Table 4.27, a and b. As we have discussed previously, the PMA is probably better viewed as a measure of achievement than as a test of "pure" ability or intellectual capacity. The WISC may be considered as measuring something closer to "innate" ability, and as we have already noted, it is slightly more highly correlated with Father's Education (traditionally considered one of the best indices of "inherited intelligence") than are the PMA scores. We note that there are no significant correlations between the academic achievement scores and either father's or mother's education. Thus we can argue that although achievement in school tasks is a function of ability (see the first section of this chapter), and that the son's ability is related to his father's education and presumed academic potential, the influence of parent attitudes on academic achievement is not merely a function of their correlation with parental education, as has sometimes been suggested. In our data, at least, parental education per se does not seem to influence academic achievement, whereas parent attitudes and other parent characteristics do. It must be remembered that this is a community in which parent education tends to be high and fairly homogeneous (see the description of the sample in Chapter III).

Parent education does seem to influence ability. It may be argued, however, that this influence is mediated through attitudes, child-rearing practices, the kind of model the parent provides for the child, and general stimulation of intellectual interests and pursuits, at least as probably as through genetic transmission. This is an issue which our data and the data of similar studies cannot hope to resolve. We find the most reasonable position, however, as we have discussed earlier, to be that "intelligence" in the sense of functional ability or potential for academic learning (which is what our tests measure) is an interactive function of genetically determined central structures and of experience. The role of parental attitudes and characteristics in determining the child's developmental experience is undoubtedly very great. We are thus not at all surprised that parent attitudes do relate to measures of ability, and that these relationships overlap in some cases those found for measures of achievement.

Among the father attitudes, Closeness to Father seems to be related to the WISC Verbal score and to Reading Ability to about the same extent. The same is true for father's Non-Verbal Interests, to about the same degree. These are variables which reflect paternal characteristics which seem to have a generally facilitative influence on the development of verbal skills. We find similarly that maternal Democracy is related to performance on the WISC as well as to Reading Achievement, though somewhat more closely to the latter. Here the highest correlations among the WISC scores are with the Performance Scale, however. We might note at this point that parents' Satisfaction with Academic Progress shows significant correlations with ability, but lower than those for the achievement variables (r's = .32 vs. .42 to .55 for mothers and .30 vs. .44 to .56 for fathers). Thus parents' reactions accurately reflect actual performance more closely than potential.

There do seem, in addition, to be some parent attitudes specifically related to differences in ability and not, to any great extent, to achievement. For both parents, the cluster of attitudes expressing "positive demands for self-sufficiency" as measured at kindergarten level has low but consistent positive correlations with the ability measures. Thus one of our original hypotheses (number 4) might better have been stated as applying to ability than to achievement. This seems reasonable in retrospect, since these predictions were made in part on the basis of our findings relating to kindergarten teachers' ratings of Readiness, and these ratings turn out to be slightly better predictors of ability than of achievement as measured at second-grade level (see Table 4.5). At second-grade, mothers' attitudes of low Punitiveness and high Contingent Reward also seem to be related to the WISC scores, especially the Verbal Scale. Apparently mothers who train for mature behavior through sanctions which involve the use of reward rather than punishment are more likely to have sons with good verbal facility.

The father attitude most closely related to verbal ability, as measured by the WISC, is Sex Anxiety. Fathers with higher Sex-Anxiety have sons with lower verbal scores, and this is true for both the kindergarten and second grade attitude measures (correlation between WISC Verbal IQ and the Kindergarten measure of father's Sex-Anx.= -.34, sig. at .02 level, 2-tail). It must be noted at this point that father's Sex Anxiety is also significantly negatively correlated with father's education (r= - .41), which in turn relates (r=.37) to WISC Verbal IQ. When these relationships are partialed out, the correlation between Verbal IQ and Sex Anxiety is reduced somewhat (to - .22), but remains significant at the .10 level. This finding suffests that fathers who are anxious about, and tend to restrict, unacceptable manifestations of sexuality may inhibit the development of their sons' berbal intelligence (and conversely that permissiveness with respect to sexuality increases verbality)--a generalization which would certainly be consonant with much of psychoanalytic theory. We must recall at this point, however, our earlier findings which seem to suggest that some forms of more mature behavior and achievement are facilitated by similar father attitudes, at least to the extent that they imply training and modeling in the cultural stereotypes of masculine behavior. We shall return to a further discussion of these findings in our final chapter.

c. Sex-Role Expectancies and Achievement

Sex-role development plays a definite role in successful academic performance. This has been shown by Anastasiow (1963) and is replicated to some extent by our findings (see Table 4.18). In addition, new measures of parents' appropriate role behavior not in the earlier study, support and enlarge the role the parents' attitudes play in shaping successful academic performance as a part of the socialization of the child into his culture. First we will explore fathers' knowledge of their sons' academic achievement.

Anastasiow has postulated that sex-role learning is a major developmental task which, when met, facilitates academic achievement. In the earlier study, Anastasiow demonstrated that masculine boys (in terms of a group-administered toy-preference measure) read significantly better than boys of confused sex-typing. Theoretical support for this hypothesis is found in Freud's position that resolution of the oedipal situation releases the child for other learnings, hence academic or school learnings. To Freud it is no accident that school begins for most children at six, the beginning of latency. Parsons' position also lends theoretical support. He has postulated that through sex-role adoption, the child takes on the parental ideal and thereby the whole culture. Thus the child is motivated to adopt the cultural roles and expectancies through adoption of his sex-role.

Our position is that sex-role learning provides the child with a set by which to process new data. Learning is sex-typed to the extent that the culture, reflected through parental attitudes, associates appropriate learnings with the process of socialization. Socialization is the process by which the child both learns the culture and how to function within it.

Theoretically, fathers who function in ways consistent with sex-role expectations of the culture will encourage, through their attitudes, the attainment of learnings held to be important. There can be little doubt that this culture, and particularly the community in which this study was conducted, places a high value on academic achievement. (A description of the community and speculations about the achievement patterns of the children in the upper grades can be found in Sears and

Sherman, Pursuit of Self Esteem, and Sears, 1963).

To support our position, two facts must be demonstrated: One, fathers value and have information about their sons' achievement: and two, these same fathers demonstrate attitudes valuing sex-typed activity. In our culture, active interest and participation in sports can be viewed as sex-typed activity associated with masculine behavior and competitiveness.

To support our first position, that parents make a conscious effort to attain successful achievement in the boys, it must be demonstrated that parents have accurate information of their child's school performance. We assume that a child's success in school is reported through conferences with teachers, report cards, the work sheets the child brings home, and the behavior of the child at home reflecting academic performance. Regardless of the manner in which they receive this information, correlations between a child's achievement and parental expression of satisfaction with academic success can be used as a criterion of parents' knowledge of how well a child is doing in school.

It has already been noted that all of the first and second grade academic achievement measures are significantly positively correlated with Parents' Satisfaction With Academic Progress beyond the .001 level. This implies that parents are aware of and express satisfaction with their son's progress in realistic relationship to his actual achievement. This relationship also implies that the parents' expressed satisfaction with school success is congruent with the goals of the school, as measured by our performance criterion. That is, boys not performing high on our criterion measures have parents who express dissatisfaction with their son's academic progress. Thus, for our sample, doing well in school may be seen as a desirable goal of the parents if we interpret the correlation of achievement and satisfaction to mirror the parents' acceptance of the schools' performance criterion.

Examining Father's Satisfaction With Academic Progress, we find it significantly positively correlated to the Sears-Wright Masculine Role score (r=.49, p=.001) and negatively with the Franky Fable (r=.45, p=< .02), a measure of Oedipal resolution administered at the beginning of first grade. It is significantly positively correlated with the teacher ratings of Success In First Grade (r=.42, p=< .001), second grade teachers' ratings of Success (r=.58, p=.001), and Academic Achievement (r=.46 for reading and .60 for numerical achievement, p=< .001). Thus, success in school, as measured by the criterion of Father's attitude is associated with sex-typing measures of the boy. Equally, success in school, as measured by teacher ratings, is also associated with the boy's sex-typing measures (see Table 4.18).

The results are very similar for mothers, as can be expected from the high intercorrelation of mothers' to fathers' satisfaction with school progress (r2.80). However, this relationship implies the parents perceive the child in very similar ways, but does not imply that satisfaction is related to the same variables in both fathers and mothers.

Fathers' and mothers' satisfaction is significantly positively related to peers' ratings of academic achievement (r=.44 for fathers and .60 for mothers).

For both parents, this variable is positively related to parents' reports of the child's self-sufficiency, mastery, and impulse control. However, related attitudes may be expressed by fathers and mothers, yet not be related to child behavior in the same way. Mothers may express interest in and value masculine behavior because, as we have speculated in the earlier study (Anastasiow 1963), mothers teach sex-typing although the father provides the model for such behavior

Thus far, we have shown the relationship of the child's sex-typing measures to fathers' and teachers' ratings. This does not answer the question as to the relationship between the father's masculine sex-role behavior and his achievement and sex-role aspirations for his son, through the model he provides or the learnings he reinforces. Our measures of Fathers' Interest in Sports may serve as a criterion for paternal sex-typing. Fathers' Interest in Sports is positively related to the Sears-Wright Adult Role measure (r=.38, p=.05), kindergarten teachers' ratings of Maturity (r=.27, p=.05), second grade teachers' rating of Masculinity (r=.35, p=.01), and Physical Ability (r=.28, p=.05). Each of these measures can be taken as a measure of sex-typed behavior of the son, which, if these significant correlations can be interpreted to display the influence of the father's attitude, are facilitated by the father's sex-appropriate interest. Thus, there appears to be a relationship between fathers' and sons' sex-role behavior. In addition, other achievements may be defined in a broad sense to include positive peer and teacher perceptions of culturally valued behaviors which are also significantly positively related. Second grade teachers' ratings of Persistence (r=.40, p=.01), Popularity (r=.44, p=.01), Self Sufficiency (r=.30, p=.02), and peer ratings of Popularity (r=.27, p=.05), as well as total positive reputation on the PNI (r=.27, p=.05), and Attentiveness (r=.28, p=.02), and Kindergarten teachers' rating of Social Virtues (r=.33, p=.02) and Achievement Motivation (r=.28, p=.02), are significantly positively related to this variable.

In addition, academic achievement measures are consistently positively and significantly related to Fathers' Interest in Sports. This variable is significantly correlated with all of the first and second grade achievement measures, whereas it is not significantly related to the WISC measures or the PMA measures save for PMA Total (r=.25, p=.05). Interest in Sports is also significantly related to the achievement-reputation measures: kindergarten teachers' rating of Readiness (r=.33, p=.02), second-grade teachers' rating of Numerical Achievement (r=.36, p=.01), Success in Second Grade (r=.47, p=.01), peer ratings of Academic Achievement (r=.28, p=.05), fathers' rating of Satisfaction With Academic Progress (r=.33, p=.01), and Mothers' Satisfaction With Academic Progress (r=.27, p=.05).

Thus, the boys' achievement measures are related to fathers' sex-typing as well as to teachers' and peer-ratings from which the son's sex-typing may be inferred. A more direct measure of the boy's sex-typing may be found in the results of the Franky Fable, a measure of Oedipal resolution, a high score indicated low resolution.

Franky Fable is significantly negatively related to first grade

Gates Primary Word Reading ($r = -.25$, $p = .06$); second grade Advanced Primary Reading ($r = -.35$, $p = .05$), and all of the PMA measures. In addition, it is significantly negatively related to kindergarten teachers' rating of Readines. ($r = -.32$, $p = .05$), first grade teachers' ratings of Success ($r = .40$, $p = .01$), Reading Achievement ($r = -.36$, $p = < .01$), Achievement Motivation ($r = -.29$, $p = .05$), father ratings of Mastery ($r = -.43$, $p = .01$), Satisfaction With Academic Progress ($r = -.45$, $p = < .01$). Interestingly, this same variable is significantly positively correlated with fathers' kindergarten measure of Rejection ($r = .37$, $p = .05$). Father's rejection of the child may be viewed as not providing the child with an appropriate and rewarding sex-typed model, or as measured in kindergarten as reflecting the father's rejection of an inappropriately sex-typed boy. (A more directly psychoanalytic interpretation would be that paternal rejection increases castration-anxiety.)

Thus, relationships exist between the fathers' sex-role interests and their sons' sex-role behavior and academic achievement. The theoretical link of our performance measures to our net of constructs lies in the facilitating aspect of sex role adoption, in that role incorporates the goals the adults have for the child (here, academic success) as well as providing the child with a mode or style of behavior--that once adopted releases energies for new learnings.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

This study may be viewed in its broadest terms as an investigation of the interpersonal context within which academic achievement developes. We have explored the relationships of achievement to the personality characteristics of our subjects as viewed by significant others at school (teachers, peers) and at home (parents). In turn we have studied differences in achievement and achievement-related personality characteristics as a function of the attitudes, characteristics and perceptions of significant others in the family (parents). Although few of our correlations are of impressive magnitude and some of our specific hypotheses were not confirmed, the general pattern of our findings may be said to support our main predictions. Academically successful boys exhibit a syndrome of mature or well-adjusted behavior, characterized by self-sufficiency, general competence, adequate impulse-management and social acceptance. In turn this syndrome of good interpersonal adjustment and successful achievement developes in a context of parental attitudes expressive of warmth and mutual esteem among family members, high valuation of achievement combined with positive and supportive demands for self-sufficiency, and an absence of anxious restriction of impulse-expression. Before proceeding to a more detailed discussion of our findings and their implications, some comments seem in order on the definitions and operational measures of our variables as they have developed in the course of the study, particularly our criterion measures of achievement.

Our original hypotheses were developed with a rather specific set of criterion measures in mind, namely scores on the standard tests of reading and arithmetic achievement which are ordinarily administered at this grade level. We also assumed that teachers' and peers' ratings of achievement would be an accurate reflection of the same kind of performance measured by the standard tests, as this performance had been demonstrated in a given child's day-to-day work in the classroom. (We had also hoped to obtain self-ratings, but had to drop this part of our plan.) This assumption proved to be correct; both teachers' and peers' ratings of achievement were significantly correlated with the test scores. The same held true for parents' reports of their satisfaction with their son's academic achievement; parental satisfaction was closely related to actual achievement scores. Thus we may conclude that the significant others in a child's environment (parents, teachers, peers) have access to quite valid information about his academic performance, even at this relatively early point in his school career. We do not know to what extent parents and peers are able to predict second-grade achievement at earlier points in time, not having collected information on this question. Our data do, however, demonstrate quite clearly that teachers are able to make such predictions. One of our most impressive findings is the very sizable correlation between kindergarten teachers' ratings of Readiness for First Grade and achievement in both first and second grade. Our data, added to those collected by Anastasiow and Mlodnosky in their dissertation projects, also elucidate to a considerable extent the aspects of kindergarten boys' behavior on which such predictions by teachers are based. We shall return to this point shortly.

Thus we can very legitimately stretch our operational definition of achievement to include the appraisals of significant others along with test scores. Further consideration of some of our other measures has led us to broaden the definition still further. We had originally thought of the Primary Mental Abilities Test as a measure of scholastic aptitude or ability rather than achievement. Further reflection led us to suspect that this destinction was not warranted, and our suspicions were certainly confirmed by our data. At this grade level (if we can generalize from our findings) PMA scores are as highly correlated with scores on reading and arithmetic achievement tests as they are with other PMA scores. This seems very reasonable, since the same basic academic skills are to a large extent involved in performance on both kinds of test. We have therefore considered the PMA as an additional measure of achievement.

This raised for us the knotty problem of the relationship between ability and achievement, and whether it was possible at all to obtain independent measures of ability. We have discussed this question at some length in Chapter I, and expressed the point of view that for a variety of reasons it is neither practically nor conceptually feasible to think of truly independent measures of ability and achievement. We concluded, in other words, that the search for an independent measure of "innate" ability is futile, since performance on intelligence and on achievement tests must inevitably be affected by past experience. We did, however, decide to give the Wechsler Intelligence Scale for Children in addition to the PMA, since such an individually administered intelligence test allows for some greater degree of control by the examiner of the subject's motivation and is less directly dependent on academic skills and classroom behavior. The WISC did in fact prove to be somewhat less closely correlated with achievement scores than the PMA, although it is still a good predictor of achievement, as one would expect.

Of more crucial significance for our research problem, however, is the degree to which antecedent parent attitudes associated with achievement are also correlated with intelligence. Such findings would necessitate the use of partial correlations (or a similar approach) to sort out any influence of parental attitudes on achievement beyond that mediated through their effects on intellectual functioning. As it turned out, there was not a great deal of overlap between the parent-attitude correlates of intelligence and those of achievement. It must be conceded that this may reflect the relatively low number of significant findings in both areas. However, it is clear that the relationships between parent attitudes and achievement variables are not (or only to a slight extent) mediated through influences on intelligence, as measured by the WISC. We derive further support for this conclusion from the fact that differences among our sample in parents' education are not significantly related to achievement, although they do correlate with WISC scores. Further we find that our personality measures, of self-sufficiency for instance, regularly correlate more highly with achievement than with ability measures, although they do relate to both. The inference would seem to be that although measures of both achievement and intelligence reflect interpersonal influences and differences in personality functioning, there is some selectivity in effects and the influences are greater on achievement.

The findings in relation to intelligence, although not the main focus of this study, are of some interest in their own right. We suggested in the last chapter that our original hypotheses about the facilitating effect of positive parental demands for self-sufficiency seemed to apply better to intelligence than to achievement. The other particularly interesting finding was the negative correlation between father's Sex Anxiety and verbal IQ. Taken together these findings would suggest that parents who discourage independent exploration of the environment and hold restrictive attitudes with respect to impulse expression are likely to inhibit their sons' intellectual development, especially in verbal areas. Conversely, parents who encourage self-reliance and are relatively open in their attitudes towards sexuality and other aspects of impulse life, are likely to facilitate intellectual development. Such a conclusion would be in general agreement with psychoanalytic theories which equate sexual inhibition with inhibition of curiosity, and hence of intellectual development.

We have said that achievement at this grade level is a very general as put of behavior, which can be measured in a number of ways and reflects a great many influences. This is also true in another sense, which has forced us to reconsider a number of our original hypotheses. We had predicted, mostly on the basis of the findings of Maccoby and Rau with older children, that self-sufficiency and social adjustment, as well as the relevant parental antecedents, would be more closely related to numerical than to verbal achievement. We have found no support for these predictions in our data, at least by the method of analysis pursued so far, and the differences in correlations are so slight as to suggest that further analysis will be unprofitable. The findings, as well as the correlations among the achievement measures, indicate that achievement in second-grade is more global than it is at later ages, that it is less possible to distinguish between achievement or intellectual functioning (at least by means of the usual measures) in verbal and in numerical areas. As discussed in the first section of Chapter IV, the number problems given our subjects also involved verbal skills, and we found in fact that the PMA Number subtest was the best single predictor of other achievement measures (i.e., correlated as closely with reading tests as they did with each other). The most reasonable conclusion would seem to be that in the primary grades the mastery of reading is the child's most crucial task, and that performance in all other areas tapped by standard group tests depends to a large extent on that. At later ages, particularly if one excludes non-readers from one's sample, it is possible to obtain a more differentiated picture of performance in different areas. There are some indications in the present data that there may be more differentiation of perceptual-spatial abilities form verbal and numerical abilities even at this grade level, just as in the Maccoby-Rau study; spatial ability was found to correlate less closely to either verbal or numerical ability than they did to each other. Thus the exploration of the differential correlates of spatial versus verbal-numerical measures may hold some promise, but this is beyond the scope of the present study.

We have commented on the "globality" of achievement at this age level, at least as reflected in the variety of measures we have used. This generalization can be made even more strongly about our measures of achievement-related personality characteristics. Our original hypotheses specified self-sufficiency, mastery, impulse-control and social adjustment as separate traits or dimensions of personality functioning. Since we predicted essentially the same parental antecedents as related to each, it is fairly clear that we assumed that these variables would be positively intercorrelated. This turned out to be the case, however, to an even greater extent than we had anticipated and casts some doubt on our conceptual distinctions. It is unclear at this point to what extent this outcome is a result of the particular measures we have used. There is a fair degree of agreement between different "judges'" (e.g. parents' and teachers' reports) of a given characteristic, but in general a given set of judges' reports of supposedly different traits intercorrelate more highly than different judges' reports of the same trait. This strongly suggests the operation of halo effects. These are evident in the teacher-ratings at all three grade levels at which we have collected them. They are present most acutely in the peer-rating measures, and we have discussed at some length in Chapter III the problems arising from the very high intercorrelations among the peer-rating raw score scales and our attempts to cope with them via the use of partial correlations and residual scores. The residual peer-rating measures posed some problems in interpretation, but in general this seems to us a promising approach to the difficulties occasioned by the very obvious tendency of children of this age to attribute all good things or all bad things to the same individuals.

It should be noted that high intercorrelations among PNI scales, although most extreme in this sample of second-graders, have appeared in previous versions of the instrument applied to older children (see Maccoby and Rau, 1962, and Wiggins and Winder, 1961). The problem of a general factor of "social desirability" is of course a familiar one in the personality assessment literature, and also arises in connection with our parent attitude scales.

Halo effects may not, however, be the whole story. We have also noted that ratings by different judges (e.g. teachers and peers who had access to essentially the same information about our subjects' behavior because they saw them in the same situation (e.g. the classroom) seemed more closely related than reports by teachers and parents, for instance, who saw these boys in different situations. This leads to the truism that behavior is determined in part by the situation in which it occurs. It also seems to us that different judges may have interpreted the same set of questions about a given trait, self-sufficiency for instance, from somewhat different subjective frames of reference. This possibility seemed clearest when we compared the context of mothers' and fathers' reports of their sons' self-sufficiency. We hazarded the hypothesis that mothers and teachers may judge self-sufficiency more in terms of a boy's conformity to adult demands for self-care and self-direction, whereas fathers and peers are more prone to equate self-sufficiency with spontaneous strivings for mastery and to be more consistent in their judgments of the latter aspect of self-reliant behavior.

The influence of situational sources of variance was particularly evident in our attempts to develope experimental measures of various theoretically relevant aspects of impulse-management: resistance to distraction, delay of gratification and avoidance of failure. In general these situational tests proved much less closely related to our other personality measures or to parental antecedents than did rating variables. In the case of the resistance to distraction measures, this was clearly a function of very low test-retest reliability. The same might also have been true for the other experimental measures, had we attempted to measure trait consistency. One might conclude that it would be necessary to obtain a great many repeated measurements to arrive at a stable measure of susceptibility to distraction, for instance, and one shudders at the motivational problems this would pose for our young subjects. Herein may precisely lie the superior usefulness of the more global rating measures, with all of their inherent problems which we have just discussed. Teachers, parents, classmates or other judges who are well acquainted with a subject, when asked to report about his competence or his self-sufficiency, distill their impressions from a great many observations of his behavior in a wide variety of representative situations. It is not surprising, therefore, that such measures of personality characteristics appear to be not only more reliable but also more valid, at least in the sense of generating a larger number of theoretically relevant relationships with other variables.

We are inclined to believe that above and beyond any measurement artifacts in our data, what we have chosen to call "self-sufficiency", "impulse-control", "mastery" and "social adjustment" do in fact represent closely interrelated aspects of a general syndrome of maturity or adjustment in boys of this age. Thus a boy who is more self-sufficient will be more competent in a variety of activities, will be better able to be appropriately assertive rather than scattered and impulsive in his behavior, will be able to resist distraction and persist in the face of failure, and will be more popular with his peers. Kindergarten teachers readily identify this syndrome in their pupils, and evidently make their judgments of readiness for academic work on the basis of individual differences in this interrelated set of behaviors, as well as the cues they may have about "innate" ability. As we have noted, these judgments prove to be highly valid predictors of later objective measures of ability and achievement. Undoubtedly this predictive power is a function of the continuity in the relative status of different boys with respect to their general maturity and adjustment at least through the primary grades. Second-grade teachers' judgments reflect the same syndrome, as do parents' and peers' reports at that age level.

Our hypotheses that this set of personality characteristics would be closely related to differences in academic achievement were largely sustained by our findings. The measures of self-sufficiency yield perhaps the most consistent set of findings. They are generally positively related to both ability and achievement measures, more closely to the latter. In general the measures of mastery, impulse-control and social adjustment also support our hypotheses, though as we have noted there is little evidence of specific correlates of achievement in one area as contrasted with another. The only major inconsistencies appear in some of the PNI residual scores, and the possible interpretation of these discrepancies has been discussed in Chapters III and IV. The findings from the Anastasiow study would indicate that we should add the development of appropriately sex-typed choices to our set of measures of maturity. Some of the findings on the ratings of masculinity are less clear, and it is an open question at this point to what extent teachers' and others' judgments of masculinity represent the same aspect of sex-role behavior as do choices of sex-typed toys. Perhaps the latter are more closely related to achievement because they represent a more cognitive aspect of sex-role development, not necessarily paralleling an "all-boy" pattern of social behavior.

These findings are, of course, open to the possible alternative interpretation that differences in personality reflect more basic differences in ability, rather than influencing intellectual functioning. No decisive answer to this question is possible in a correlational study, but we can at least assert that the follow-up design we have employed does allow us in some instances to demonstrate differences in personality characteristics as reported by teachers and parents which predict subsequent differences in achievement and IQ scores, and where the personality measures were collected before any direct feed-back of information about such differences in performance.

Our argument about the influence of parental attitudes also rests largely on the fact that the early measures of parent attitudes were collected some time before the measures of achievement. It is clear, of course, from the data presented in Chapter III that there is a fair degree of continuity over time in the dimensions of parent attitudes we have measured. (We noted some interesting minor exceptions, particularly with respect to Achievement Standards, which seem to change in their implications for boys academic success between our kindergarten and second-grade data.) Whatever influences of parental attitudes were operative at kindergarten continue to a large extent to operate at second-grade. This consistency tends, in a sense, to support the predictive value of early measures of parent attitudes.

The somewhat fuller set of parent attitude scales administered to our second-grade sample of parents enabled us to clarify the structure of the attitude dimensions tapped by our questionnaire. There were some minor but rather interesting differences between mothers' and fathers' responses. On the whole, however, most of the variance in the responses may be said to reflect the three main factors of positive demands for self-sufficiency, strictness and warmth (or positive vs. negative evaluations of self and others). These findings are in broad agreement with those of Schaefer and others that the meaningful differences in parent attitudes, at least as reflected in responses to self-report inventories, may be subsumed under two or three such general dimensions.

Of what predictive value are such measures of parent attitudes and to what extent do they reflect significant parental influences on personality and achievement? Our data rather generally support the view that parent attitudes are related to the maturity-adjustment syndrome. To a lesser extent, the same parent attitudes predict achievement. This lends some credence to the view that this set of personality characteristics may be thought of as midiating the influence of parent attitudes on achievement. For instance, mothers' scores on the Democracy scale administered at kindergarten level predict both self-sufficiency and achievement in second-grade, and the latter two variables intercorrelate. We consider it a reasonable conclusion from such findings that mothers' attitudes influence differences in self-sufficiency, which in turn influence academic success.

The specifics of our findings in relation to parent attitudes are discussed in considerable detail in the preceding chapter. We shall not attempt to recapitulate them here. Rather we shall offer a few general conclusions which seem to us to be justified by the data. It seems to us that our hypotheses concerning the influence of parental attitudes on personality characteristics gain considerable support. In general they were better sustained for mothers' than for fathers' attitudes. Low maternal rejection (or maternal warmth and self-esteem) was perhaps the single most important dimension, significantly predicting all aspects of more mature and adjustive behavior. Mothers' positive demands for self-sufficiency predicted self-sufficiency and mastery, whereas restrictive attitudes tended to predict poor impulse management and lower popularity and social acceptance. For fathers, on the other hand, what we have labelled the "paternal involvement" factor seems to be a more important influence on their sons' adjustment than any of the dimensions we originally hypothesized. (This is true in part because our original conceptualizations fitted better the actual structure of maternal attitudes.)

There are fewer significant relationships between parent attitudes and achievement; our findings in this area are certainly less impressive. Maternal reward of self-sufficiency and the self-esteem aspect of the low rejection factor seem to be of some importance as predictors of achievement, and thus presumably they reflect the important aspects of maternal influence. One might interpret these findings to mean that a mother who is relatively self-confident, values independence and rewards it in her son is likely to lend effective support to his achievement strivings. Again the "paternal involvement" factor seems to represent the crucial aspect of fathers' attitudes. Fathers seem to influence their sons' achievement largely through their availability, appropriacy and reward-value as models of sex-typing. One possible intepretation of the influence of fathers' sex-typed behavior (e.g. interest in sports) is that they stimulate assertiveness and competitiveness in their sons, and that this in turn affects achievement-motivation.

A word must be said at this point about the nature of our sample, which may have a crucial bearing on the limited number and significance of our findings in relation to achievement. It is evident from the introductory section of Chapter III and elsewhere in this report that the 10 boys studied in this project come from a quite highly selected population with respect to achievement, ability, socio-economic status and education of parents, and therefore presumably with respect also to parental attitudes. It has been found repeatedly in earlier studies (e.g. Miller and Swanson, Loevinger) that parents' child-rearing attitudes are very much a function of socio-economic status, particularly as reflected in educational level. The average father of a boy in our study, at least among those who responded to the questionnaires, was a college graduate and the average mother had had at least two years of college. As reflected in our achievement measures, we started out with an above average population of children with a restricted range of scores, and as the study progressed selective effects of parents' willingness to have their children subjected to study and to respond to our questionnaires themselves further narrowed the sample. This is perhaps inevitable in studies of this kind, which require the cooperation of an "enlightened" community. But we may well have failed to include in our sample precisely those children, even within the Palo Alto population, who represented the crucial lower extremes of the range of achievement and the most deviant parental attitudes. (The possible effects of dropping those children retained in first grade are obvious.) Certainly our sample, with a mean IQ of 115, is also a biased one with respect to ability. It therefore seems justified to conclude that what findings we were able to obtain represent an underestimate of the relationships existing in a broader range of the population, although in a less selected sample the problem of controlling for differences in intelligence might have become more acute.

In spite of these limitations, the least that can be said about our findings is that they demonstrate the perhaps rather obvious point that more than sheer aptitude or ability needs to be taken into account in predicting achievement. Interpersonal adjustment and maturity, and the influences of parent attitudes and family relationships, are important. To the extent that these generalizations are justified, they seem to us to be of more than "academic" significance. Clearly a child's interpersonal adjustment and his family's attitudes must be considered in making any practical decisions which will affect his educational experiences.

It also seems to us of real practical significance that achievement and adjustment in later grades (at least during the primary years) can to such a large extent be predicted from teachers' judgments and parents' reports about a child's level of maturity (with respect to self-sufficiency, mastery, etc.) by the end of his kindergarten year. Furthermore, as demonstrated in Mlodnosky's study, teachers and parents agree to a considerable extent in these judgments, as well as in their later assessments of achievement. Differences in boys' adjustment and maturity as manifested in school and at home are clearly influenced by parental attitudes. This would seem to us to provide a real basis for the usefulness of programs of parent education, aimed at the modification of parent attitudes in directions more conductive towards adjustment and successful achievement in their sons. Such programs could be based on quite early assessment of the relevant personality characteristics, and might well prove effective in averting more serious deviancy and academic difficulty in later grades. It may ultimately prove that such attempts at modification of parental attitudes, accompanied by systematic assessment of their effects, will provide much more conclusive evidence for our original hypotheses.

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DISTRIBUTION OF SCORES OR RATINGS

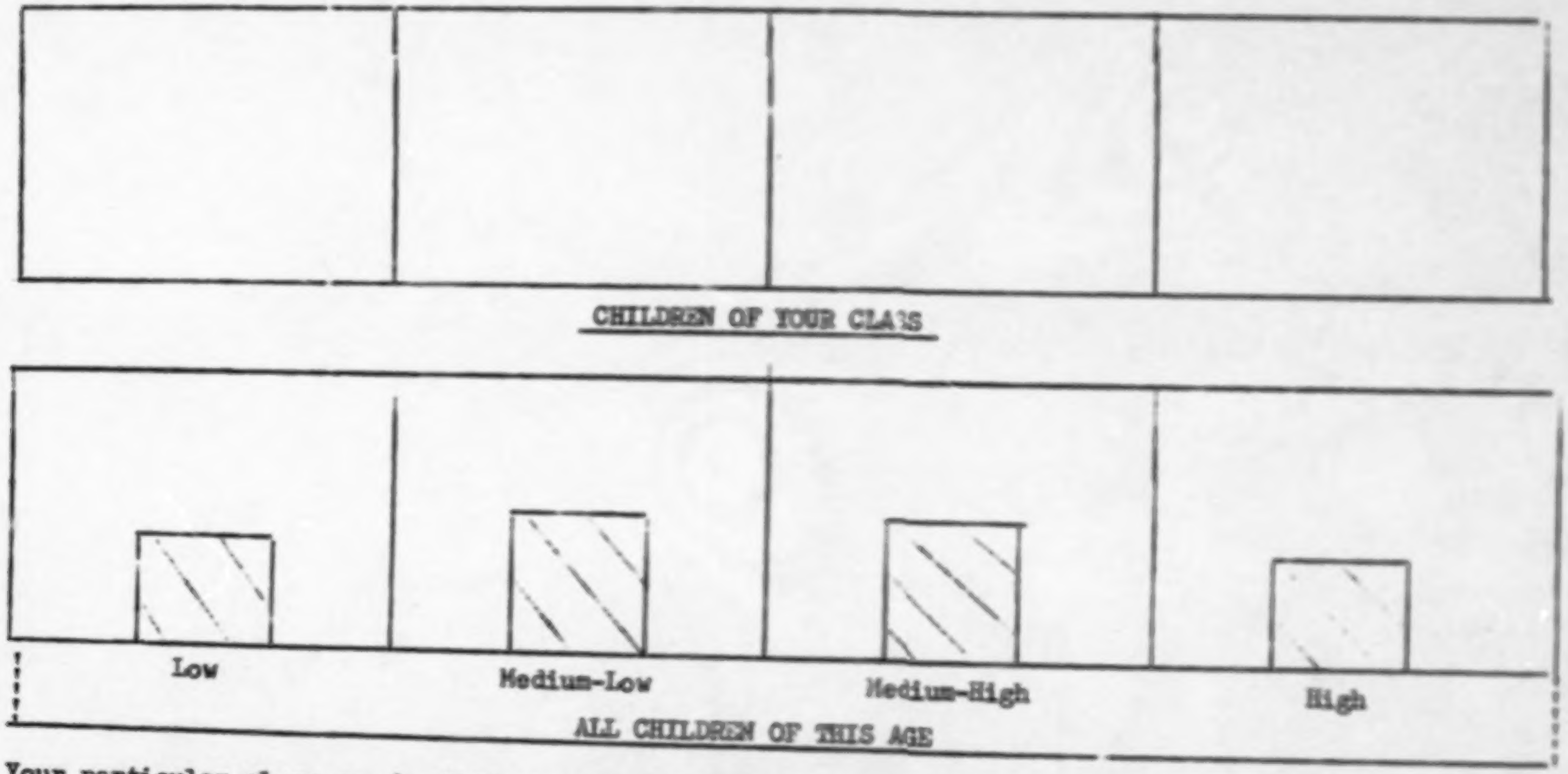
Numerical Achievement

Date ____________________

Grade ____________________

Teacher ____________________

Definition and Examples: He has achieved skill in dealing with numbers. He has a knowledge of number facts such as counting, adding and subtracting. He is able to deal successfully with story problems.



Your particular class may be different from this; it may be up or down on this scale. Think of your __lowest__ child and your __highest__ child; these will be the ends of your class scale. Put them on your scale, then place the rest of the children also in the 4 groups which are roughly the size of the "all children" scale. For a class of 28, this would be approximately 6 children in the High group, 8 in the Medium High and Medium Low, 6 in Low; however, your class may have slightly different numbers in these groups.

APPENDIX A

DISTRIBUTION OF SCORES OR RATINGS ON	Definition and Examples:
Persistence	He is persistent. When he starts a task he will almost always stick to it until the job is completed. Even though he encounters difficulties with his work he doesn't give up easily.
Poor Self-Control	This child has little self-control. He has difficulty following the rules of the classroom. He can't seem to sit still. He is always getting out of his seat and moving about the room. He is not able to keep his mind on his work. He often talks when he is supposed to be working and is bothersome to others in the classroom.
Popularity	He is popular with the other children. They like him.
Masculinity	He is a sturdy child. He is direct in his approach to others. He is "tough" without necessarily being aggressive. He displays vigor in his participation in classroom and outdoor activities. He prefers to play boys' games. He is "all boy."
Success in Second Grade	I feel that this child is doing well in second grade. He has been able to succeed in the things that were expected of second graders.
Achievement Motivation	This child is highly motivated to do well in his school work. He often shows concern about his performance and tries to do his very best.
Avoidance of Failure:	He is reluctant to try new things because he is afraid he won't succeed at them. If he fails at something the first time he might get quite upset and be unwilling to continue. In placing children on this scale consider how often the child has exhibited this behavior. Give the high score only to those children who do this sort of thing quite frequently.

DISTRIBUTION OF SCORES OR RATINGS ON	Definition and Examples
Social Virtues	This child is high in the social skills, traits that make getting along with others a smooth and comfortable process. He observes the rules of social conduct in the broadest sense. He is sensitive to others' feelings, helpful, courteous, cooperative, and is kind to others and tries to make them feel at ease. His relationship with others is usually comfortable and harmonious.
Reading Achievement	He reads well for his grade level. He has attained skills in letter recognition. He has a large reading vocabulary and has developed word attack skills and reading comprehension at a high level.
Physical Ability	This person gives the appearance of being "built for" physical activities. He is strong and has a high energy level. He is agile and quick and has a great deal of stamina. He has both large and small muscle coordination and his accuracy in movements indicates good eye-hand coordination. His movements are sure, not awkward.
Self-Sufficiency	This child is self-sufficient. He usually goes ahead on his own and does his work without seeking an unusual amount of help from his teachers or his classmates. (Note: We recognize that some children need more help to successfully master the content. We are asking you to rate the child's readiness to ask for help relative to the amount of help he actually needs. For instance, a child who has a great deal of difficulty with his work but requests a moderate amount should be rated higher in self-sufficiency than a very able child who asks for the same amount of help.)

APPENDIX B

INSTRUCTIONS FOR ADMINISTERING PNI** SECOND GRADE FORM

Distribute the booklets, seeing that the children keep them closed on their desks.

Then read the following verbatim:

We have been having boys and girls describe things they do. Now we want to find out if children here do the same sort of things. So we have written down lots of things that boys do. You can pick which boys in your class do these things. Just guess the best you can. First, please put your name on the front of the booklet.

Now turn to the first page. You see it says number 1. After that it says: "He's good at games." Underneath are the names of all the boys in the class. We'll read through them to make sure you know them all.

Now find the name of a boy who is good at games. Put a line through his name. Who else is good at games? Put a line through his name. Put a line through the name of every boy who is good at games. You don't have to put a line through your own name for any of these, but you can if you want to.

Now turn the page. On this page it says: "Number 2. He's sort of trouble." Put a line through the name of every boy who is sort of trouble. (This paragraph is repeated for each subsequent item.)

If you're not very sure about some of these, just guess the best you can. You can probably think of some boys for each of these.

Now turn the page. On this page it says.......etc.

APPENDIX B. PNI Items

1 He's good at games.

2 He's sort of trouble.

3 He's a good speller.

4 He pushes when he's in line.

5 He's not scared of anything.

6. He pays attention to his work.

7 He listens to the teacher.

8 He acts like a baby.

9 He's very quiet.

10 He's one of my friends.

11 He likes to chase girls.

12 He's a good worker.

13 He gets out of his seat and walks around the room.

14 He's good at numbers.

15 He's sure of himself in most things.

16 He makes a lot of noise.

17 He always finishes his work.

18 He acts like he should be in kindergarten.

19 He doesn't take part much.

20 The kids like him

21 He writes nicely.

22 He makes it so other people can't think.

23 He asks the teacher pretty much.

24 He's a crybaby.

25 He's real silly.
26 He's good at getting things done.
27 He comes up and asks the teacher questions.
28 He is very sloppy.
29 He obeys the teacher.
30 He can't seem to sit still.
31 He's a pretty good reader.
32 He likes to find out about things.
33 He does things right.
34 He talks all the time.
35 He helps the teacher.
36 He's the kind of kid I like.
37 He gets a job done.
38 He talks when he's supposed to be working.
39 He's good at doing lots of things.
40 He has good manners.
41 He's always calling people names.
42 He does a good job.
43 He wiggles around.
44 He's goofing off all the time.
45 He's smart.
46 He wants the teacher to help with his work.
47 He sometimes sucks his thumb.
48 He's shy.

APPENDIX C

INTELLIGENCE TEST RATING SCALES

1. ATTENTIVENESS

    5. Very attentive: Attention continuously concentrated on test instructions and materials. Appears impervious to any external visual or auditory stimuli. Never makes extraneous comments or engages the examiner in conversation not related to test.

    3. Moderately attentive: Generally concentrates on task at hand but may comment or be distracted occasionally by school buzzers, books or other materials external to the testing situation.

    1. Distractible: Difficult to keep child's attention oriented toward task. Frequently makes nonpertinent comments, is disconcerted by external stimuli or is generally figidty and unable to concentrate.

2. INTEREST AND ENJOYMENT OF PROBLEMS

    5. Expresses obvious enjoyment and interest in problems and tasks. May comment on them being "fun" or ask if there aren't more of a certain type, etc.

    3. Average interest: Shows no particular signs of enjoyment or interest in the tasks nor is there any reason to believe the child does not enjoy the test. The child may present a mixed reaction, liking one part of the test but not another.

    1. Dislikes tasks. Appears bored and disinterested. May make negative comments or indicate dislike less directly, i.e., frequently asking when the test will be over, etc.

3. PERSISTENCE

    5. Very persistent: Child is reluctant to leave a question unanswered or a task unfinished. May appear almost indefatigable on such tasks as block design, i.e., continues working diligently after time is up, etc.

    3. Moderate persistence throughout entire test or presents a mixed reaction with marked persistence on one part and lack of persistence on another part of a test.

    1. Is willing to give up at slightest difficulty. May be willing to acknowledge defeat almost before a question is asked or problem stated. Needs prodding and frequent re-asking or re-wording of questions, a procedure which often brings a correct response.

4. INTERPERSONAL EASE

   5. Very friendly and outgoing. Talks freely and spontaneously, making himself immediately at ease in the testing situation.

   3. Moderately friendly and outgoing. Is perhaps shy and quiet initially but responds readily to examiners' attempts to establish rapport. Is generally at ease throughout the testing situation.

   1. Quiet and withdrawn. Responds to examiners' questions and attempts to establish rapport minimally or not at all. Never really relaxes in the testing situation nor shows any signs of spontaneous friendliness.

5. MASCULINITY

   5. High exaggerated masculinity.

   3. Average. No evidence one way or the other.

   1. Effeminant characteristics evident.

6. CONCERN AND/OR ANXIETY ABOUT PERFORMANCE

   5. High concern or anxiety evident. Child shows obvious and frequent concern with quality of performance. May ask "Is that right?" or "Am I doing O.K.?" etc., and/or appears extremely upset over failure, i.e., becoming anxious when compelled to admit he isn't able to answer a question or do a problem.

   3. Moderate concern about performance.

   1. Low concern over performance. Shows an evident lack of concern with his performance.

7. RELIABILITY

   3. No reason to suspect test administration is not reliable.

   1. Some factor interfered with the administration of the test or the child's response to it which calls into question the reliability, i.e., the child appears unusually fatigued, ill or in some way disturbed by the testing situation itself or because of some preoccupation, illness, or lack of rapport.

APPENDIX D

STANFORD PARENT QUESTIONNAIRE INSTRUCTIONS

RMA Revision - May 1963

Father's Form

The following statements have been made by parents about themselves, their children, and their families. Please read each statement and decide how it applies to you.

Look at the next page of this questionnaire for a minute and you will see that there are four columns on the right hand side of the page. On the left side of the page there are statements. You should put one check mark next to each statement. You may put the check mark under SA or A or D or SD. SA means you agree strongly with the statement. A means you agree with the statement more than you disagree with it. D means you disagree with the statement more than you agree with it. SD means that you strongly disagree with the statement.

If you agree strongly with the statement or feel sure that it applies to you, put a check mark in the column marked SA. SA means Strongly Agree.

If you are sure that a statement does not apply to you or you strongly disagree with the statement, put a check mark in the column marked SD. SD means Strongly Disagree.

Use the A (Agree) or D (Disagree) columns for statements you are less sure about or feel less strongly about.

Please mark every statement, even though some may not seem to describe you or your family. For example, there might be a statement about brothers and sisters and you may have only one child. Give the answer according to what you believe you would think or feel or do if the statement did apply, or the situation did come up.

Please mark the statements as they apply to your 2nd grade boy identified on the face sheet.

Please fill out the questionnaire without comparing notes with your wife. You may find it interesting to compare answers after you have both finished. If you do this, be sure not to change any of your answers. We are interested specifically in mother's and father's ideas about these things.

Work as quickly as you can. You do not need to think about each statement too carefully--just give your impression about it. In other words, answer every one, but do not think too long about any one. Start with number 1 and do each one in order. Give your impression of each statement quickly and go on to the next one.

CODE NUMBER: ____________

STANFORD PARENT QUESTIONNAIRE INSTRUCTIONS

RMA Revision - May 1963

Mother's Form

The following statements have been made by parents about themselves, their children, and their families. Please read each statement and decide how it applies to you.

Look at the next page of this questionnaire for a minute and you will see that there are four columns on the right hand side of the page. On the left side of the page there are statements. You should put one check mark next to each statement. You may put the check mark under SA or A or D or SD. SA means you agree strongly with the statement. A means you agree with the statement more than you disagree with it. D means you disagree with the statement more than you agree with it. SD means that you strongly disagree with the statement.

If you agree strongly with the statement or feel sure that it applies to you, put a check mark in the column marked SA. SA means Strongly Agree.

If you are sure that a statement does not apply to you or you strongly disagree with the statement, put a check mark in the column marked SD. SD means Strongly Disagree.

Use the A (Agree) or D (Disagree) columns for statements you are less sure about or feel less strongly about.

Please mark every statement, even though some may not seem to describe you or your family. For example, there might be a statement about brothers and sisters and you may have only one child. Give the answer according to what you believe you would think or feel or do if the statement did apply, or the situation did come up.

Please mark the statements as they apply to your 2nd grade boy identified on the face sheet.

Please fill out the questionnaire without comparing notes with your husband. You may find it interesting to compare answers after you have both finished. If you do this, be sure not to change any of your answers. We are interested specifically in mother's and father's ideas about these things.

Work as quickly as you can. You do not need to think about each statement too carefully--just give your impression about it. In other words, answer every one, but do not think too long about any one. Start with number 1 and do each one in order. Give your impression of each statement quickly and go on to the next one.

CODE NUMBER: ___________

STANFORD PARENT QUESTIONNAIRE SCALES
Mother Items

Scoring

Scale 2 -- Contingent Reward

SA	A	D	SD	MSU	RMSU
4	3	2	1	9	6
4	3	2	1	20	13
4	3	2	1	25	17
4	3	2	1	73	51
4	3	2	1	161	103
4	3	2	1	236	159

Scale 3 -- Rejection

SA	A	D	SD	MSU	RMSU
4	3	2	1	12	9
4	3	2	1	13	10
4	3	2	1	29	21
4	3	2	1	39	27
4	3	2	1	51	37
4	3	2	1	56	41
4	3	2	1	66	46
4	3	2	1	67	47
4	3	2	1	79	54
4	3	2	1	122	79
4	3	2	1	123	80
1	2	3	4	126	83
4	3	2	1	134	87
4	3	2	1	137	89
4	3	2	1	171	113
4	3	2	1	179	118
4	3	2	1	190	126
4	3	2	1	200	134
4	3	2	1	232	157
4	3	2	1	250	169

Scale 4 -- Sex Anxiety

SA	A	D	SD	MSU	RMSU
4	3	2	1	17	12
4	3	2	1	35	25
4	3	2	1	41	29
4	3	2	1	60	43
4	3	2	1	69	49
1	2	3	4	92	61
4	3	2	1	97	66
4	3	2	1	111	71
4	3	2	1	136	88
4	3	2	1	196	131
4	3	2	1	229	155
4	3	2	1	231	156
1	2	3	4	271	183

Scale 6 -- Restrictiveness

SA	A	D	SD	MSU	RMSU
4	3	2	1	11	8
4	3	2	1	26	18
4	3	2	1	149	95
4	3	2	1	167	109
4	3	2	1	180	119
4	3	2	1	205	137
4	3	2	1	215	146
4	3	2	1	221	151
4	3	2	1	227	154
4	3	2	1	245	165
4	3	2	1	255	172

Scale 11 -- Demands for Aggression

SA	A	D	SD	MSU	RMSU
4	3	2	1	42	30
4	3	2	1	47	33
4	3	2	1	48	34
4	3	2	1	50	36
1	2	3	4	55	40
4	3	2	1	57	42
4	3	2	1	75	52
4	3	2	1	78	53
4	3	2	1	82	56
4	3	2	1	106	68
4	3	2	1	119	77
4	3	2	1	147	93
4	3	2	1	153	98
4	3	2	1	154	99
4	3	2	1	170	112
4	3	2	1	183	121
1	2	3	4	208	140
4	3	2	1	223	152
4	3	2	1	224	153
4	3	2	1	265	178
4	3	2	1	267	179

Scale 12 -- Punitiveness & Physical Punishment

SA	A	D	SD	MSU	RMSU
4	3	2	1	5	3
4	3	2	1	6	4
4	3	2	1	36	26
1	2	3	4	49	35
4	3	2	1	63	45

continued next page

SA	A	D	SD	MSU	RMSU
4	3	2	1	163	105
4	3	2	1	189	125
4	3	2	1	195	130
4	3	2	1	206	138

Scale 13 -- Parental Aggression

SA	A	D	SD	MSU	RMSU
1	2	3	4	68	48
1	2	3	4	129	84
1	2	3	4	158	101
4	3	2	1	177	117
1	2	3	4	184	122
4	3	2	1	185	123
4	3	2	1	191	127
4	3	2	1	193	128
1	2	3	4	194	129
1	2	3	4	219	149
4	3	2	1	264	177
4	3	2	1	270	182

Scale 14 -- Self-Esteem

SA	A	D	SD	MSU	RMSU
1	2	3	4	30	22
1	2	3	4	34	24
1	2	3	4	43	31
1	2	3	4	52	38
1	2	3	4	53	39
1	2	3	4	98	67
1	2	3	4	124	81
1	2	3	4	125	82
1	2	3	4	130	85
1	2	3	4	145	92
1	2	3	4	164	106
1	2	3	4	182	120
1	2	3	4	284	194

Scale 16 -- Positive Father-Mother Relation

SA	A	D	SD	MSU	RMSU
4	3	2	1	110	70
4	3	2	1	117	75
1	2	3	4	239	160
1	2	3	4	273	184
1	2	3	4	274	185
1	2	3	4	275	186
1	2	3	4	276	187
1	2	3	4	277	188
1	2	3	4	278	189
1	2	3	4	279	190
1	2	3	4	280	191
4	3	2	1	281	192
1	2	3	4	283	193
1	2	3	4	285	195
1	2	3	4	286	196
1	2	3	4	287	197
4	3	2	1	288	198
1	2	3	4	289	199
4	3	2	1	291	200
4	3	2	1	292	201
1	2	3	4	293	202
1	2	3	4	294	203
1	2	3	4	295	204

continued next column

Scale 18 -- Use of Models

SA	A	D	SD	MSU	RMSU
1	2	3	4	15	11
4	3	2	1	22	15
4	3	2	1	83	57
4	3	2	1	150	96
1	2	3	4	151	97
4	3	2	1	172	114
4	3	2	1	199	133
4	3	2	1	235	158

Scale 19 -- Sex Role Expectations

SA	A	D	SD	MSU	RMSU
1	2	3	4	2	1
4	3	2	1	72	50
1	2	3	4	118	76
4	3	2	1	162	104
4	3	2	1	204	136
4	3	2	1	212	143
4	3	2	1	213	144
4	3	2	1	214	145
4	3	2	1	218	148
1	2	3	4	241	161
1	2	3	4	248	167
1	2	3	4	258	174
4	3	2	1	296	205

Scale 20 -- Resemblance to Parent

SA	A	D	SD	MSU	RMSU
4	3	2	1	10	7
4	3	2	1	21	14
4	3	2	1	242	162
4	3	2	1	247	166

SA	A	D	SD	MSU	RMSU
Scale 22 -- (Fathers Only)					
Scale 23 -- Democracy					
4	3	2	1	40	28
4	3	2	1	89	59
4	3	2	1	93	62
4	3	2	1	114	74
4	3	2	1	120	78
4	3	2	1	133	86
4	3	2	1	166	108
4	3	2	1	217	147
4	3	2	1	257	173
4	3	2	1	259	175
Scale 25 -- Rewarding Independence					
1	2	3	4	27	19
4	3	2	1	80	55
4	3	2	1	90	60
4	3	2	1	96	65
4	3	2	1	148	94
4	3	2	1	165	107
4	3	2	1	169	111
4	3	2	1	173	115
4	3	2	1	176	116
4	3	2	1	243	163
4	3	2	1	249	168
4	3	2	1	268	180
Scale 26 -- Child's Mastery					
4	3	2	1	44	32
4	3	2	1	84	58
4	3	2	1	107	69
4	3	2	1	113	73
1	2	3	4	220	150
4	3	2	1	251	170
4	3	2	1	269	181
Scale 27 -- Achievement Standards					
4	3	2	1	94	63
4	3	2	1	95	64
4	3	2	1	112	72
4	3	2	1	155	100
4	3	2	1	159	102
4	3	2	1	168	110
4	3	2	1	198	132
4	3	2	1	201	135
4	3	2	1	207	139
4	3	2	1	244	164
4	3	2	1	262	176
Scale 28 -- Reasoning					
4	3	2	1	3	2
4	3	2	1	7	5
4	3	2	1	23	16
4	3	2	1	28	20
4	3	2	1	32	23
4	3	2	1	61	44
1	2	3	4	142	90
4	3	2	1	143	91
4	3	2	1	186	124
4	3	2	1	210	141
1	2	3	4	211	142
4	3	2	1	254	171

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STANFORD PARENT QUESTIONNAIRE SCALES
Father Items

Scoring

Scale 2 -- Contingent Reward

SA	A	D	SD	MSU	RMSU
4	3	2	1	8	5
4	3	2	1	28	18
4	3	2	1	72	45
4	3	2	1	156	97
4	3	2	1	239	156

Scale 3 -- Rejection

SA	A	D	SD	MSU	RMSU
4	3	2	1	14	9
4	3	2	1	15	10
4	3	2	1	30	20
4	3	2	1	49	32
4	3	2	1	54	37
4	3	2	1	66	41
4	3	2	1	67	42
4	3	2	1	121	76
4	3	2	1	122	77
4	3	2	1	133	83
4	3	2	1	166	107
4	3	2	1	169	110
4	3	2	1	176	114
4	3	2	1	234	153
4	3	2	1	252	165
4	3	2	1	257	168

Scale 4 -- Sex Anxiety

SA	A	D	SD	MSU	RMSU
4	3	2	1	19	12
4	3	2	1	36	23
4	3	2	1	41	26
4	3	2	1	59	38
4	3	2	1	69	44
1	2	3	4	88	53
4	3	2	1	94	59
4	3	2	1	108	67
1	2	3	4	115	71
4	3	2	1	135	84
4	3	2	1	193	126
4	3	2	1	231	151
4	3	2	1	233	152
1	2	3	4	274	180

*Scale 6 -- (See page 3)

Scale 11 -- Demands for Aggression

SA	A	D	SD	MSU	RMSU
4	3	2	1	42	27
4	3	2	1	46	29
4	3	2	1	47	30
1	2	3	4	53	36
4	3	2	1	73	46
4	3	2	1	76	47
4	3	2	1	116	72
4	3	2	1	141	86
4	3	2	1	144	88
4	3	2	1	151	94
4	3	2	1	152	95
4	3	2	1	165	106
4	3	2	1	181	117
1	2	3	4	206	133
4	3	2	1	225	148
4	3	2	1	226	149
4	3	2	1	268	217
4	3	2	1	270	176
4	3	2	1	304	210

Scale 12 -- Punitiveness and Physical Punishment

SA	A	D	SD	MSU	RMSU
4	3	2	1	3	1
4	3	2	1	4	2
4	3	2	1	37	24
1	2	3	4	48	31
4	3	2	1	63	40
4	3	2	1	158	99
4	3	2	1	186	120
4	3	2	1	192	125
4	3	2	1	203	131

Scale 13 -- Parental Aggression

SA	A	D	SD	MSU	RMSU
1	2	3	4	68	43
4	3	2	1	96	61
1	2	3	4	127	80
4	3	2	1	174	113
4	3	2	1	182	118
1	2	3	4	187	121
4	3	2	1	188	122
1	2	3	4	191	124
4	3	2	1	267	175
4	3	2	1	273	179

SA	A	D	SD	MSU	RMSU
Scale 14 -- Self-Esteem					
1	2	3	4	10	7
1	2	3	4	32	21
1	2	3	4	35	22
1	2	3	4	51	34
1	2	3	4	52	35
1	2	3	4	95	60
1	2	3	4	123	78
1	2	3	4	124	79
1	2	3	4	128	81
1	2	3	4	142	87
1	2	3	4	159	100
1	2	3	4	180	116
1	2	3	4	198	130
4	3	2	1	220	145
1	2	3	4	276	182
1	2	3	4	277	183
1	2	3	4	278	184
Scale 16 -- Positive Father-Mother Relation					
4	3	2	1	106	65
4	3	2	1	107	66
4	3	2	1	114	70
1	2	3	4	275	181
1	2	3	4	279	185
1	2	3	4	280	186
1	2	3	4	281	187
1	2	3	4	282	188
1	2	3	4	283	189
1	2	3	4	284	190
1	2	3	4	285	191
1	2	3	4	286	192
4	3	2	1	287	193
1	2	3	4	288	194
1	2	3	4	289	195
1	2	3	4	290	196
1	2	3	4	291	197
1	2	3	4	292	198
4	3	2	1	293	199
4	3	2	1	294	200
1	2	3	4	295	201
4	3	2	1	296	202
1	2	3	4	297	203
1	2	3	4	298	204
1	2	3	4	309	215

SA	A	D	SD	MSU	RMSU
Sale 18 -- Use of Models					
1	2	3	4	17	11
4	3	2	1	25	16
4	3	2	1	78	48
4	3	2	1	146	90
1	2	3	4	148	92
4	3	2	1	167	108
4	3	2	1	196	128
4	3	2	1	237	154
Scale 19 -- Sex Role Expectation					
4	3	2	1	11	8
4	3	2	1	23	14
4	3	2	1	157	98
4	3	2	1	212	138
4	3	2	1	213	139
4	3	2	1	214	140
4	3	2	1	219	144
1	2	3	4	244	158
1	2	3	4	250	163
1	2	3	4	258	169
4	3	2	1	266	174
Scale 20 -- Resemblance to Parent					
4	3	2	1	9	6
4	3	2	1	24	15
4	3	2	1	218	143
4	3	2	1	238	155
4	3	2	1	245	159
1	2	3	4	307	213
4	3	2	1	308	219
Scale 22 -- Closeness to Father					
1	2	3	4	299	205
1	2	3	4	300	206
1	2	3	4	301	207
4	3	2	1	302	208
4	3	2	1	303	209
1	2	3	4	305	211
1	2	3	4	315	216

Scale 23 -- Democracy

SA	A	D	SD	MSU	RMSU
4	3	2	1	40	25
4	3	2	1	84	51
4	3	2	1	90	55
4	3	2	1	101	62
4	3	2	1	119	75
4	3	2	1	132	82
4	3	2	1	161	102
4	3	2	1	189	123
4	3	2	1	209	135
4	3	2	1	217	142
4	3	2	1	262	172
4	3	2	1	306	212

Scale 25 -- Rewarding Independence

SA	A	D	SD	MSU	RMSU
4	3	2	1	22	13
4	3	2	1	86	52
4	3	2	1	93	58
4	3	2	1	117	73
4	3	2	1	149	93
4	3	2	1	160	101
4	3	2	1	163	104
4	3	2	1	168	109
4	3	2	1	173	112
4	3	2	1	246	160
4	3	2	1	251	164
4	3	2	1	271	177

Scale 26 - Child's Mastery

SA	A	D	SD	MSU	RMSU
4	3	2	1	43	28
4	3	2	1	50	33
4	3	2	1	79	49
4	3	2	1	89	54
4	3	2	1	104	64
4	3	2	1	111	69
1	2	3	4	164	105
4	3	2	1	170	111
1	2	3	4	222	146
4	3	2	1	253	166
4	3	2	1	256	167
4	3	2	1	272	178

Scale 27 -- Achievement Standards

SA	A	D	SD	MSU	RMSU
4	3	2	1	91	56
4	3	2	1	92	57
4	3	2	1	110	68
4	3	2	1	153	96
4	3	2	1	162	103
4	3	2	1	195	127
4	3	2	1	197	129
4	3	2	1	204	132
4	3	2	1	208	134
4	3	2	1	247	161
4	3	2	1	265	173

Scale 28 -- Reasoning

SA	A	D	SD	MSU	RMSU
4	3	2	1	5	3
4	3	2	1	7	4
4	3	2	1	26	17
4	3	2	1	60	39
4	3	2	1	103	63
4	3	2	1	118	74
4	3	2	1	139	85
4	3	2	1	183	119
4	3	2	1	210	136
1	2	3	4	211	137
4	3	2	1	243	157
4	3	2	1	260	171

*Scale 6 -- Restrictiveness

SA	A	D	SD	MSU	RMSU
4	3	2	1	29	19
4	3	2	1	81	50
4	3	2	1	145	89
4	3	2	1	147	91
4	3	2	1	177	115
4	3	2	1	215	141
4	3	2	1	223	147
4	3	2	1	229	150
4	3	2	1	249	162
4	3	2	1	259	170

5

APPENDIX E

Code Number * ________

MOTHER'S DATA SHEET

Names of second-grade boy to whom this questionnaire refers ____________.

School ______________________

Please fill in the following information:

1. Your name ______________________
2. Your exact relationship to second-grade boy (mother, aunt, step-mother, etc.) ______________________
3. Did your boy attend nursery school? Yes - How many years ___. No ___
4. Please list the members of your household, including yourself and second-grade boy:

Name	Relationship to Boy (e.g., mother, father, stepfather, sister, grandmother, etc.)	Age	Occupation or Grade in school
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

* NOTICE: As soon as you return this questionnaire, this page will be removed and kept in a separate locked file. Your answers will not be identified with your name. So, you can be very frank on this questionnaire and your answers will be kept completely confidential. Your code number is given at the top.

Are there other members of the immediate family living outside the home? if so, please list them also, as described above:

Name	Relationship to Boy	Age	Occupation or Grade in School
1.			
2.			
3.			
4.			
5.			

5. Highest year you completed in school (e.g., 10th grade, 3 years college, 2 years graduate school, etc.) ____________

   Diplomas or degrees obtained: ________ ____________

6. Have you worked during this child's life? ______ If so, at what periods of his life and for approximately how much time per week? ________

   ____

   ____

   If you were working out of the home, who cared for your son while you were at work? ____________

   ____

7. Has your son ever been separated from you? ____________

   If ever separated, at what age(s)? ________ for how long? ________

   ________ for how long? ________

   ________ for how long? ________

8. At what age did you start having baby sitters for him? ________

9. Some behaviors are listed below which are usually learned at different ages between infancy and adulthood. Put in the blank space the age at which you expect the average child to have learned this behavior.

   ________ To be weaned from bottle and drink from cup only

   ________ To feed himself

   ________ To brush, comb, and fix hair by himself

   ________ To decide completely on his own selection of clothing according to weather and occasion

_________ To keep his own room tidy
_________ To answer ads in the paper and order by mail
_________ To undress and go to bed alone
_________ To go on his own to nearby places outside of limits of hometown
_________ To earn his own spending money
_________ To ride a two-wheel bike
_________ To have complete choice of his own friends
_________ To use scissors on his own
_________ To take a part-time job without first telling parents
_________ To bathe himeself without help
_________ To drive a car in an emergency
_________ To prepare a hot lunch for himself
_________ To dress himself
_________ To spend his money without asking his parents (more than "candy money")
_________ To do responsible routine tasks with little or no directions
_________ To cross busy street alone
_________ To use a sharp knife
_________ To shop for own clothing (value under $10.-)

10. With regard to your own interests what do you like to do in your leisure time? (List) _________ _________ _________ _________ _________ _________ _________

11. How much time do you spend reading? _________ hours per day.

How much of this time is spent reading

Newspapers _________ hours (or part of hour) per day

Magazines _________

Fiction Books _________

None-Fiction Books _________

Other (indicate what type) _________________________

12. Are you interested in any sports? (list which) __________ __________

__________ __________ __________ __________

As onlooker? __________ or actively? __________

How much time do you spend with this? __________ hours per week.

Do you have any interest in arts and crafts? (list which) __________

__________ __________ __________ __________

How much time do you spend on this?__________ hours per week.

Do you have any other hobbies? __________ (list) __________

__________ __________ __________

How much time do you spend on hobbies? __________ hours per week.

Would you call yourself a "do-it-yourself" person? __________

13. Does your child join you in any of the activities you have mentioned? __________

Which ones? (list) __________ __________ __________

How much time do you spend together in this way? ______ hours per week.

Code Number * ________

FATHER'S DATA SHEET

Name of second-grade boy to whom this questionnaire refers ____________

School ____________________________

Please fill in the following information:

1. Your name ______________________
2. Your exact relationship to second-grade boy (father, stepfather, grandfather ______________________
3. Highest year you completed in school (e.g., 10th grade, 3 years college, 2 years graduate school, etc.) ______________________

   Diplomas or degrees obtained ______________________
4. Has your son ever been separated from you? __________ If ever separated, at what age(s)? ________ for how long __________

   ________ for how long __________

   ________ for how long __________
5. Some behaviors are listed below which are usually learned at different ages between infancy and adulthood. Put in the blank space the age at which you expect the average child to have learned this behavior.

________ To be weaned from bottle and drink from cup only

________ To feed himself

________ To brush, comb, and fix hair by himself

________ To decide completely on his own selection of clothing according to weather and occasion

________ To keep his own room tidy

________ To answer ads in the paper and order by mail

________ To undress and go to bed alone

________ To go on his own to nearby places outside of limits of hometown

________ To earn his own spending money

________ To ride a two-wheel bike

* NOTICE: As soon as you return this questionnaire, this page will be removed and kept in a separate locked file. Your answers will not be identified with your name. So you can be very frank on this questionnaire and your answers will be kept completely confidential. Your code number is given at the top.

__________ To have complete choice of his own friends

__________ To use scissors on his own

__________ To take a part-time job without first telling parents

__________ To bathe himself without help

__________ To drive a car in an emergency

__________ To prepare a hot lunch for himself

__________ To dress himself

__________ To spend his money without asking his parents (more than "candy money")

__________ To do responsible routine tasks with little or no directions

__________ To cross busy street alone

__________ To use a sharp knife

__________ To shop for own clothing (value under $10.-)

6. With regard to your own interests what do you like to do in your leisure time? (List) __________ __________ __________
__________ __________ __________

7. How much time do you spend reading? __________ hours per day.

How much of this time is spent reading

Newspapers __________ hours (or part of hour) per day

Magazines __________

Fiction Books __________

Non-Fiction Books __________

Other (indicate what type) __________

8. Are you interested in any sports? (list which) __________
__________ __________ __________

As onlooker? __________ or actively? __________

Do you have any interests in arts and crafts? (list which) __________
__________ __________ __________

How much time do you spend on this? __________ hours per week.

How much time do you spend repairing things around the house or fixing the car? ________ hours per week. Describe ____________________

____

Do you have any other hobbies (list) ___________________________

____________ ____________ ____________ ____________

How much time do you spend on your hobbies? ________ hours per week.

Would you call yourself a "do-it-yourself" person? ____________

9. Does your child join you in any of the activities you have mentioned?

________ Which ones? (list) __________ __________ __________

How much time do they spend together in this way? ______ hours per week.